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THE

MERCANTILE MARINE MAGAZINE.

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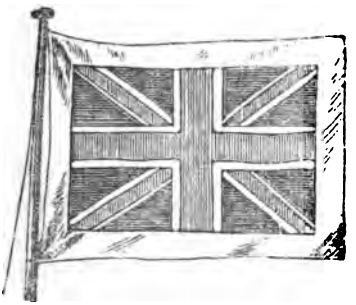

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VOL. V.

JANUARY TO DECEMBER 1858.

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THE

MERCANTILE MARINE

MAGAZINE.

JANUARY 1858.

REMARKS ON RIO GRANDE DO SUL.

WITH EXTRACTS FROM THE JOURNAL OF THE BRIG "DRIVING MIST," ON A VOYAGE TO THAT PORT AND HOME, IN 1857.

April 1st. At 10.30 a.m. weighed anchor from Cardiff Roads, under all sail; barometer 29·30; wind south and fresh, increasing: p.m., barometer 29·10; wind increasing; shortened sail as requisite. At 5, discharged the pilot, Mort Point bearing south, three miles;—blowing a brisk gale; under double-reefed top-sails, courses, jib, and single-reefed main-try-sail; barometer 29·00, with a gloomy cloudy sky.

April 2nd commences with strong gales from S.W.; barometer 28·90; the wind hauling to the W.N.W. and moderating towards noon; barometer 29·05; made all requisite sail, working to the S.W.

April 3rd. Light variable south and westerly winds throughout; the barometer at noon 29·65; at 8 p.m. the Seven Stones Light bore S.E. (true) dist. 4 miles, standing to the westward on the port tack, the weather continuing moderate until

April 8th, a.m. which commenced with a fresh breeze from S.W. the barometer 29·70, wind increasing at daylight; took two reefs in the top-sails and main-try-sails, and tacked to the S.E. Noon, strong gales with a confused sea; tacked to the westward; barometer 29·65; lat. 47° 35′N. long. 11° 6′W.; p.m., increasing gale and sea; in jib and main course; ship labouring and shipping much water over all fore and aft; at 6, tacked to the S.E.; barometer 29·60; midnight, gloomy squally unsettled weather; barometer 29·40.

April 9th. a.m., strong gales, hauling to the westward; barometer 29·30. At daylight, the wind hauled to the W.N.W.

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gale increasing; barometer 29·17; in main-try-sail. Noon, strong gale with a high sea, ship labouring much, shipping large quantities of water fore and aft; lat. 46° 37′N. long. 11° 19′W.; barometer 29·33. At 5 p.m., shipped a heavy sea over the starboard gangway, giving the ship a heavy lurch to leeward: in fore-top-sail; barometer 29·40; found the ship making water, it being necessary to pump her out every hour. Midnight, steady hard gale with a high sea; wind N.N.W.; barometer 29·50.

April 10th. a.m., hard N.N.W. gale, with squally weather, a heavy sea running; ship labouring much, shipping large quantities of water, washed away starboard bulwarks and filled the long-boat. At 9, barometer 29·70; gale moderating; made sail as necessary. Noon, gale moderating, but still a heavy sea; lat. 43° 40′N., long. 12° 58′W.; barometer 29·70. From this we had fine weather, and made all possible sail on our course.

April 15th. Passed to the westward of Madeira, with a steady N.E. breeze.

April 17th. In lat. 30° 58′N., long. 18° 44′W.; had light S.W. winds, and calms.

April 21st. At noon, lat. 27° 44′N., long. 19° 4′W.; caught the N.E. Trade, and proceeded on inside the Cape Verd Islands.

May 4th. Lost the N.E. Trade, in lat. 4° 0′N., long. 20° 0′W. the wind being light and variable from the eastward, with occasional showers, but no calms.

May 6th. Took the S.E. Trade, in lat. 1° 40′N., long. 20° 30′W.

May 7th. Crossed the Equator in 21° 30′W. and proceeded with a steady Trade, carrying all port stud-sails fore and aft, until

May 15th. In lat. 16°S. long. 34°W. lost the S.E Trade, and had light variable airs and calms, up to

May 19th. In lat. 17° 9′S. long. 36° 21′W. the breeze freshened up from the S.E., after which I had fine weather, carrying all sail, up to

May 25th. In lat. 26° 18′S. long. 42° 50′W. the weather became unsettled, the wind hauling to the northward, the barometer 29·98, falling to 29·85.

May 26th. a.m., fresh north wind, with gloomy clouded unsettled weather, and occasional rain; barometer 29·82. At 4, a dense dark overcast sky; in all small sails; wind increasing, coming in gusts; in jib and courses, and double-reefed the top-sails and main-try-sails. At daylight, dark gloomy threatening sky, every appearance of a sudden gale; the wind stormy, in gusts, with rain at intervals; clewed up and stowed the top-sails; the wind variable, veering and hauling between N.N.E. and N.W. At 10, the wind being steady at N.N.W., barometer 29·85, and the sky clearing, set the double-reefed top-sails and

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courses; steering to the S.W. Noon, lat. 28° 1'S. long. 45° 5'W.; barometer 29·80.; p.m., gloomy cloudy threatening sky, with a watery sun; barometer falling to 29·70. At 0.35, clewed up and stowed top-sails and courses, and rounded-to on the port-tack, under double-reefed main-try-sail and fore-top stud-sail; supposing a rotary storm to be passing to the S.W., and bearing W., wind N.N.W., down royal yards, and made all secure about the decks. At 2, same weather, with a rising sea; barometer 29·60. At 2.15, wore ship to the S.W., and set the fore-course, the barometer falling almost immediately to 29·55; took in the fore-course and rounded-to again on the port tack. At sunset, hard gales from N.N.W. with a heavy lumpy sea, barometer 29·50, up to midnight, when the barometer stood 29·45, and it blew a heavy gale, with a furious sea; ship rolling and labouring much, shipping heavy lumps of water on deck fore and aft; pumps carefully tended.

May 27th. a.m., hard gales hauling westerly; at 2, the gale began to abate, wind hauling to the S.W.; barometer 29·50, and rising; made sail accordingly. At daylight, barometer 29·70; set the double-reefed top-sails. At noon, wind W.S.W. moderate and fine, with a confused sea; barometer 29·70; lat. 28° 28'S. long. 44° 41'W. At sunset, barometer 29·85; out all reefs. Midnight, light breezes from S.S.W. with fine weather.

May 28th. a.m. light variable winds with fine weather. At 2, a breeze sprang up from W.byN; out top-gallant-sails and flying jib. At 4, increasing breeze; in flying jib. At day-break, increasing breeze and sea; in top-gallant-sails. At 8, in two-reefs of the top-sails and main-try-sail; wind and sea increasing; in jib, fore-try-sail and courses. Noon, strong gales from W.S.W. with a heavy confused sea; ship labouring much; shipping much water on deck; barometer 29·90; lat. 29° 4'S, long. 45° 5'W. At sunset, gale moderating, made sail accordingly, barometer 29·95. Midnight, light variable airs; barometer 30·00; ship rolling violently; out reefs, and made all sail to keep her steady; from this we had fine weather with variable winds.

June 3rd. Noon, lat. 30° 52'S. long. 49° 2'W.; with a steady N.E. breeze; steering S.W. at 5 knots. At 4, p.m. sounded in 85 fathoms, bottom of red speckled sand and minute particles of shells; steered S.W.byW. 24 miles up to midnight, when sounded in 75 fathoms; bottom coarse gravel and shells; observed lat. by star 31° 26'S.; barometer 30·15.

June 4th. a.m., light N.E. airs and fine. At 8, having sailed 12 miles S.W. sounded in 63 fathoms, mud. Noon, lat. 31°30'S. long. 50° 25'W; barometer 30·20; sounded in 55 fathoms, dark thick mud. p.m. light easterly airs, inclining to calm, steering S.W.byW. at 4 knots. At 4, sounded in 45 fathoms, mud.

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At 8, steering S.W.byW. 14 miles, sounded in 33 fathoms, sand. At midnight, having sailed S.W. 12 miles, got 26 fathoms, sand.

June 5th. a.m. light N.E. airs with fine weather, steering W.S.W. 2 knots per hour, soundings as follows:—

at 2 a.m.—24½ fathoms,—fine sand.
4 „ —21 ditto ditto
5 „ —15 ditto ditto

At daylight, calm, current setting to the southward, the breeze coming up again from the east; steering about S.W.byW. 2 knots; Soundings as follows:—at 8, 14½ fathoms, sand; at 8.30 10 fathoms, when keeping the lead going every 10 minutes, found the same water up to 9.15, and at 9.30 found 16 fathoms, therefore, there must be a bank here. At 10, 14½ fathoms. At 10.30, 13½ fathoms. At 11, 13 fathoms, and at noon, 12 fathoms; barometer 30·18; lat. 32° 4'S., long. 51° 38'W. p.m. light airs; steering W.S.W., 1½ knots. At 4.30 sighted the land, low sand hills, bearing from W.byN. to N.N.W.; sounded in 10 fathoms, sand. At 6, 8½ fathoms; the light in sight bearing W.N.W.; stood off and on for the night; soundings varying from 7½ to 11 fathoms, hard sand.

June 6th. At daylight, calm with thick fog, anchored in 9½ fathoms, it continuing calm until noon, with a smooth sea; found the current setting north, ½ knot per hour; barometer 30·15. p.m., a light breeze from the N.E., the fog cleared off when the light-house bore N.W.byW.½W., the flag up on the tower, and the Bar-boat on the S.W. Bar; weighed and steered in W.S.W. for the boat, until in 6½ fathoms, when the flag was hauled down, and I stood off for the night. The anchor brought up stiff mud, with a surface of coarse sand and shells. The three-masted clipper, *Come On*, which made sail from Cardiff Roads one hour after me, came up to the bar, having made the same passage as my brig to an hour. The captain told me he crossed the equator in 30°W. and had no bad weather at all to the south ward of the equator. He drew 10ft. 6in. consequently he got over the bar two days before me; my brig drew 11ft.3in. or 15½ palms, nearly,—the Brazilian palm being reckoned at 8¾ inches, not 9 as generally supposed.

June 7th. Light N. Easterly breeze with fine weather, a current setting to the S.W., ship working to windward all day, having lost ground during the night; no flag upon the tower. At 5 p.m., anchored in 9 fathoms; light-house, N.N.W.; from this time I got under weigh every day, standing off and on, approaching the Bar as near as was safe, with uniform fine weather, and anchoring at night, the current setting generally from S.byW. to S.W.byS. 1½ knots, with a fine smooth sea, and sometimes twenty sail, dodging off the Bar, mostly Brazilians of light draught; during this time, the barometer ranged above 30·0, until p.m. of the 9th, when it fell to 29·85, although no indication of bad weather.

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June 11th. At noon, light easterly airs, with a slight current to the northward; the flag being upon the tower and the Bar boat on the S.E. Bar, weighed, under all sail, and got out four 15-feet oars, with two hands on each, to help her along. At 4·45, the breeze increasing, passed the Bar-boat, the light-house bearing N.N.W.; and carrying 13 feet water, by a true measured line, the brig struck some five or six times, from which I conclude, the Bar which is of hard sand, must be in lumps and ridges, and continually shifting. At 5.15 came too in 7 fathoms, light-house E.byN., the wind east, and a strong current running out, here I lay until

June 13th, when at sunrise a breeze came in from the S.W. a pilot came off, weighed and proceeded up the river, and at 10 a.m., brought up in 5 fathoms water, off the wharf at St. Jose do Norte.

Masters of vessels bound to Rio Grande do Sul, should be very careful in getting all the necessary papers from the Brazilian Consul, at the port from whence they sail,—including an attested manifest, whether laden or in ballast, as this will save much unnecessary trouble, annoyance and detention.

On entering the Port, it is best to anchor in the nearest clear berth, westward of the Guard Ship, until cleared by the health-officer, and have all hatch-ways as well as stores sealed up. Here good fresh water can be procured by your own crew, from a small creek on the western shore, with but little trouble. Beef and vegetables can also be procured, but of an inferior quality and much dearer than at the town.

After passing pratique, a pilot will come on board, and conduct the vessel to Do Sul or Do Norte, the two anchorages for loading or discharging; the latter being preferable, as there is always sufficient water. But this must depend on the provisions of the charter-party or bills of lading.

If bound to St. Jose do Norte, it is customary to anchor off the Custom-house wharf, and moor with 30 fathoms to the north and south. Here there is a resident pilot, who will moor and unmoor your vessel when required to shift your berth, for 4000 reis, but it is not necessary to employ him.

On landing, you will easily find the agent of your consignees, who will act as interpreter, and pass your entries in the Custom-house there, and then proceed with you to Do Sul, and complete, and at the same time introduce you to the Consulate and your consignee. If laden with a general cargo, you must take your turn to discharge, and are quite at the mercy of the Custom-house officials. If laden with coals or salt, the Customs give every facility; therefore, should you meet with any detention, it is the fault of your consignees, who do not trouble themselves until your lay days are expired: and if you come on demurrage, you may claim, but whistle for it, unless you proceed against the charterers on your return to England.

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If bound to discharge at Do Sul, you often have much difficulty in getting there, as the channel is very shoal, narrow, and intricate,—seldom having more than ten feet of water; therefore, vessels often have to discharge a considerable portion of their cargo into lighters, and, I believe, at the risk of the ship. When arrived off the town, you moor close in shore with head and stern anchors, within a long stage length of the wharf, and as most vessels going there from Europe have general cargoes, their time of discharge will depend entirely on the Customs officials, particularly if there be many vessels in port. Vessels, by their charter-party, are often obliged to load here, consequently, unless they can arrange for a quantity of cargo to be sent by lighters outside the channel, they may be days, if not weeks, getting into deep water, and by this lose their chance of getting over the Bar, as it is almost impossible a vessel will come off the ground here and go over the Bar with the same high water, and it is only once a month, the moon's first quarter, you can expect to go safely over the bar at eleven feet, and you must be smart to do this, as the water falls so suddenly.

The soil being sandy, good fresh water can be procured any where above high water mark, by diging holes in the sand, which soon fill. There are providores and ship chandlers at both places, but those at Do Sul are most preferable. Beef and vegetables are at least 20 per cent dearer at Do Norte than at Do Sul and much inferior,—the principal market being at the latter place; therefore, as I wanted only fresh provisions, I took my own boat, and went to market once a week, and generally got good beef at 2*d* per lb, and vegetables remarkably cheap; in fact I cured sufficient beef to last my crew all the way home, and found it of very good quality.

The following is a summary of my port charges, for 185 tons English, 245 Brazilian, which must be paid in national money, and for which you pay a premium of 8 per cent.

	M	reis.
To Pilotage on the Bar on 245 tons, at 280 reis	68	600
Boat on the Bar	19	200
Pilotage, Bar to Do Norte	16	000
Anchorage on 245 tons, at 300 reis	73	500
Hospital dues, ship and crew	8	480
Custom-house pass and seals	19	200
President's pass	2	400
Towage outward 245 tons at 640	156	800
	364	180
Premium on same for national currency at 8 per cent	29	134
Carried up	393	314

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Brought up.....	393	314
Custom-house agency	32	000
Pilotage to Bar	16	000
	441	314

which at 2/3 ex. per milreis = £49. 13.
Consulate fees in proportion to consul's trouble.

August 2nd. a.m., light S.S.W. wind with fine weather. At daylight made all sail and weighed, working down towards the Bar, but the wind freshening, with a strong current running up, came too in the channel below the buoy, in 7 fathoms; here I lay until

August 4th, when the current having turned, I weighed, and dropped down to the anchorage, inside the Bar, where at this time there were 30 vessels, drawing from 10 to 16 palms, all anxious to get to sea. I drew at this time 11 feet 3in, the same as when I came in; but I would advise no master to load over 10½ feet, owing to the risk of striking on the Bar.

Ship-masters have not only to complain of the detention arising from the want of a good steamer, but also of losing chances to go out when they might, merely because it is not their turn; for the commander at the Bar, under whose orders the steamer is, will not let you out without her aid, making you pay well for it, say £20 for a vessel under 200 tons, and generally not towing you a mile; when there is a prospect of going out, pilots are sent on board of ships first in turn, the first of which the steamer takes from the anchorage, the others dropping down to a safe position inside the Bar, each awaiting her turn to be towed over; however good a chance there may be to sail over, the pilots will not try it as long as the steamer is in attendance, which, unfortunately, is never to be depended on; she is an old, worn-out affair, and therefore never does a days work without damaging her machinery. It is a disgrace to the Brazilian Government, that as they monopolize the towing in and out, they do not provide a fit and suitable vessel. The commander here is, however, very attentive, and wishes to give every facility to vessels going out, but will run no risks without steam.

August 12th, the steamer having broke down and gone up to town to repair, all the European ship-masters met on board the *John Gray*, to discuss the possibility of towing out with ships boats, when after many resolutions being submitted and discussed, it was declared to be unsafe, if not impossible, to get out without steam, or a commanding and leading wind.

On the 14th, the water being unusually high, and the wind from the westward, and thinking it possible to sail out over the S.E. Bar, application was made to the commander for pilots, but he would not consent, declaring it to be unsafe, he, moreover, sent out both Bar-boats, to take masters out to the Bar and judge

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for themselves, from which we returned decided in the opinion that it was dangerous to attempt it, there being a lift of at least 5 feet on the Bar, and a strong current setting across to the N.E,—in fact, so strong that the boats could not keep their position to windward,

August 16th, light variable winds, with fog at times, the steamer being in attendance, and a pilot on board; at noon weighed and ran down to the Bar, to wait my turn for the steamer but the fog set in so thick, was obliged to return.

On the 17th, ran down to the Bar and anchored to keep my position, in 5 fathoms, inside the Bar, light-house N.N.E.; but not having sufficient water, at 5 p.m., weighed and returned; here there was so much lift of sea, that in getting the anchor, I carried away the windlass purchase, and had much difficulty in heaving up, in fact, at one time I was afraid I should be obliged to slip, in which case, the anchor would have been lost, therefore, I would advise masters not to let the pilots anchor, but to keep dodging, which can generally be done if there is any wind at all.

On the 19th I attempted the Bar again, but had to return,—there not being sufficient water.

On the 21st, the steamer again became disabled and returned to town for some indefinite time.

August 30th. a.m., light E.N.E. breeze with fine weather, and every prospect of a rise on the Bar; hove short, and made all sail. At 1 p.m. my water signals were run up at the tower; weighed immediately; a pilot came on board and proceeded for the S.W. Bar, where at 2 p.m. he left me thumping very hard, to get off by myself; however, she kept thumping and going, and was clear in about five minutes; while striking, I had from 10½ to 13 feet water, up and down, as the swell rose and fell. I sounded the pumps, but found her only making the usual quantity of water, but unfortunately she did not long keep tight. I should think this sufficient proof to warrant my previous suggestion, that vessels should not load over 10 ft. 6 in. either in or out. I left some vessels at anchor that have been laying there six and seven weeks, and have myself known vessels outside the Bar from 20 to 30 days, since my arrival in port. Having got clear, with a moderate N.N.E. breeze, barometer 30·00, stood off on the port tack, stowed the anchors, and made all sail for sea.

August 31st. a.m., barometer 30·00; wind N.N.E. increasing; in flying-jib and top-gallant-sails. At daylight, in double-reefs of the top-sails and main-try-sails; wind and sea increasing; barometer 29·95. Noon, strong breezes from north, with a furious breaking sea; ship labouring much, taking on board large quantities of water fore and aft, which stove in the bulwarks in several places; lat. 33° 11′S. long. 50°W.; barometer 29·95; found the ship now making water, in fact, so much so, that after sucking the pumps, I had to keep one pump almost constantly

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at work, until the weather moderated; the leak I suppose to have been caused from the heavy sea encountered during the last six hours, finishing what must have been commenced by striking on the Bar. The wind, weather, and sea continued the same throughout the day.

Sept. 1st. a.m., wind hauling to the S.W. moderating, and considerably less sea; barometer 29·90. Noon, lat. 33° 6′S. long. 48° 40′W.; barometer 29·90; a steady breeze from N.W.byW.; out reefs and made all plain-sail. After carefully sounding the pump several different times as soon as the weather moderated, the least water she made was 4 in. per hour,—what she made in the heavy sea of yesterday, I had no means of ascertaining. From here I had variable but moderate breezes, with fine weather, and crossed the tropic on the 9th, in 36° 30′W. wind E.S.E. but having the Trade far easterly, indeed sometimes N.E. so that on the 19th I was in the latitude of the Recife, in 17 fathoms, fine sand, distant off shore 5 leagues.

Standing on, and making a good N.byE. course, I passed the parallel of Cape St. Roque on the night of the 20th, distant off shore about 45 miles, and crossed the Equator on the 22nd, at 40 minutes p.m. in 33° 50′W. with a steady breeze from E.byS. with all starboard stud-sails set fore and aft; after crossing the Equator, the wind hauled gradually to the S.E. and continued so with fine weather, until

Sept. 26th, lat. 8° 8′N. long. 30° 25′W. when the weather became unsettled and squally; in stud-sails and all small sails; from this the weather continued squally, blowing violently at times from the S.E. with rain, with a heavy confused sea, ship rolling heavily and washing fore and aft between the squalls.

Sept. 27th. At noon rather more moderate; lat. 9° 56 N., long. 30° 30′W. At sunset, in a heavy shower of rain, the wind hauled round by the westward and settled into the N.E., with a light breeze and weather clearing; trimmed on the starboard tack, and made all possible sail: from this I carried a steady Trade, all sail set, until

Oct. 3rd. Noon, lat. 21° 52′N., long. 37° 39′W.: barometer 30·05. The weather became unsettled, with heavy clouds hanging to the north and N.W. At 4, in flying jib, top-gallant-sails and try-sails, and hauled up the courses, the wind dying away, and heavy thunder and lightning to the N. and N.W. At sunset, heavy squalls, with thunder, lightning and heavy rain, the wind hauling round the compass twice before midnight, with continual squalls and rain.

Oct. 4th. a.m.; same weather. At 2, the sky began to clear away, the wind settling in to the E.N.E, made sail accordingly. Noon, steady fresh breeze, with fine weather, all plain sail set; lat. 23° 17′N., long. 38° 10′W.: barometer 30·10. From this I had variable easterly winds, with fine weather until

Oct. 7th. Noon, lat. 30° 16′N., long. 39°W., barometer

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30·20. The wind hauled to S.S.E., with fresh breezes and fine weather, subsequently the wind hauled gradually to the S.W., with moderate weather until

Oct. 11th. Noon, lat. 38° 21′N., long. 31° 40′W.; barometer 29·90; thermometer 75°. At 2.30 p.m., in a heavy storm, the wind hauled round to W.N.W., and at sunset, got sight of Flores, bearing true north, proving the chronometers to be correct; the barometer rose to 30·05; thermometer 70°. From this I had mostly strong winds, varying from W. to N.W. and N.

Oct. 18th. Light variable northerly winds, with fine weather; lat. 49° 37′N. long. 11° 54′W.: barometer 29.60. p.m. wind hauling round to the N.E.

Oct. 19th. At 4 p.m., sounded in 63 fathoms, white mealy sand; lat. 50° 24′N., long. 10°W.

Oct. 21st. At 8 p.m., sighted the Smalls light-house, bearing true north, wind from N. by W. to N. by E., blowing fresh, increasing to a strong N.E. gale.

Oct. 23rd, a hard gale. At 8 a.m., bore up for Waterford, and at noon, took on board a Pilot, off the Hook Point, and proceeded unto the harbour.

C. GRIBBLE, *Master.*

CYCLONES IN THE CHINA SEAS.

[*To the Editor of the Mercantile Marine Magazine.*]

HONG KONG, 15*th October*, 1857.

DEAR SIR,—This season has been unusually prolific in typhoons or cyclones in the China waters, each of which, we regret to say, has had one or more victims to its fury—owing, in some cases we fear, to a neglect of the laws which are known to govern the progress of these phenomena,—and in other cases, to the proximity of land preventing them practising that beautiful theory which, when carefully studied and acted upon, will prove the salvation of lives and property, to an extent which can scarcely be credited, or few are aware of.

The last cyclone of the 1st inst., and which we should be glad to call the last of the season, has done little damage to Hong Kong; the centre of the meteor passing to the southward of the island, though at a distance of only 25 miles or perhaps less, judging from the few data which have come to our knowledge, thus saving us from the northerly and north-west winds, which have always been so destructive in this harbour when occurring during typhoons, on account of the sea board of the town being then a lee shore.

Between 4 and 5 a.m. of the 1st, the wind here was at its

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height from E.S.E., having been previously blowing from the eastward, with heavy rain. The barometer at the same time was at its lowest range, about 29·45; the centre of the cyclone then bearing S.S.W. By 7 o'clock the wind had veered from S.E. to S., and the glass rapidly rose, as the body of the meteor passed to the westward.

Between 4 and 5 a.m. at Macao, the wind was most violent, being then about N.N.W., the barometer showing 29·20, and the centre of the cyclone bearing E.N.E. distant about 15 miles. After 5 o'clock, the wind veered to the westward and gradually abated, the barometer also rising steadily. Here a large destruction of lives, said to amount to upwards of 200, and property to the value of $200,000 occurred.

The centre of the storm must have passed over the south end of the Lemas, in the direction of Cumsingmoon, or about W.N.W., and being of very small diameter has been very violent in force. The destruction to life and property in Macao has been occasioned by the fact of the cyclone passing to the northeastward of that town, in a W N.W. direction, thus subjecting it to the violence of the northerly and north-westerly winds on its west and south-west side, while for very many years past, the cyclones, most of which have had a much larger diameter, have passed to the southward, thus causing the winds to veer to the eastward and south-east, and which winds cause but little disaster in such a harbour as Macao.

Had the centre passed to the northward of Hong Kong, and thus given us a northerly and northwest wind, we fear that very great destruction would have occurred not only to the shipping, but also to the houses, from West Point up to the Esplanade, owing to the careless mode of construction of many of the sea walls, and the proximity of native and foreign houses to the water side.

This appears a good opportunity for recommending the study of the Cyclone theory to our nautical friends, and it does seem strange that, knowing the consequences of ignorance on this subject, greater attention is not given to the Law of Storms. Our later experience and knowledge teach us by all means to endeavour to avoid the centre of these tempests, which have so often proved fatal, out of which but few ships escape at all, and none without most serious damage.

Here are two instances of the neglect or defiance of the Law of Storms.

Aug. 18th, lat. 22°N. long. 126° 36'E., barometer 29·60.; ship *North Wind*, 1040 tons, from Foochow to London, with teas. Had strong easterly winds with falling barometer; stood on her course to the southward, till they were obliged to shorten sail, and finally heave-to,—which they did on the *port tack*, the wind being east or nearly so! This was at 7 p.m.; the wind veered to N.E.—N.—N.W. and W. between 5 and 7 a.m. 19th,

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when the barometer had fallen to 27·90, blowing a hurricane and very near the centre; the ship on her beam ends, with a heavy sea from the eastward beating on her decks, which of course were swept of everything moveable; lee rail under water, the spare lower yard started from its lashings on the lee side and *went to sea*, striking first the poop, and then knocking away starboard cat-head, which, leaving a large aperture, admitted water by tons, as long as the ship was on her broadside. Cut away top-gallant masts, shortly after which the fore and main top masts went, and also the head of the fore-mast, when the ship righted with 6 feet water in the hold.

9 a.m. gale abating and barometer rising; found tiller twisted off, bowsprit sprung, and all sails blown away: steered for Hong Kong; here the cargo was discharged, at least half of it damaged and will be sold by auction. The ship has to be hove down and re-coppered, new fore-mast, bowsprit, and a thorough refit. Had the *North Wind*, on the 18th, at noon, carried sail on the starboard tack for a few hours, it is almost certain she would have escaped altogether, and the following morning resumed her course under all sail, and taken her teas to market in a sound state.

Kate Hooper, 1500 tons, from San Francisco to Hong Kong, about the middle of July, had strong easterly winds for two days, with falling barometer, being then about 200 miles E. of the Bashees; carried all the sail they could, got through the Bashees, wind shifted to the westward, still carrying a press of sail, drove up close to Formosa without seeing it, and found themselves next day close to *Botel Tobago*, with strong westerly gale: again passed through the Bashees, and arrived in Hong Kong with fore and main mast-heads carried away. Here again, had *Kate Hooper* hove-to for a few hours on the starboard tack, she would, in all probability, have arrived in Hong Kong sooner, and without damage.

As soon as I am able, I will send you particulars of another Cyclone, which has been very disastrous in the north part of the Formosa Channel.

Your's faithfully,

S. P. HALL.

PORTLAND BAY, AUSTRALIA.

Introductory Remarks:—The general trending of the South Coast of Victoria, between Cape Otway, in long. 143°33′E and Cape Northumberland, in 140° 37½′E., a distance of about 200 miles, is a direction bearing west-north-west.

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This line of coast is indented with a number of bays, all more or less exposed to the south-westerly swell of the ocean—the one most sheltered being that of Portland Bay, which is essentially different in respect to exposed aspect from any other along this sea-board, on account of the protection afforded to it by a line of coast extending six miles in a north-east direction, against all south-westerly weather.

Between the Bights of Portland and Discovery Bay, a promontory extends about twelve miles in a south-westerly direction, having, at its terminus, three remarkable capes, viz. :—Bridgewater, to the eastward, forming the western point of Discovery Bay; Cape Nelson, the most southern head-land along this coast; and Cape Sir William Grant:—Point Danger being another termination, at the extreme north-east angle of the mainland of the bay, distant from which, in a south-easterly direction, one-and-a-half miles, is the Lawrence Rock. This promontory forms the safe-guard, in a nautical view, to Portland Bay.

The headlands just referred to exceed in height 200 feet, and are conspicuous features, from their almost perpendicular and rugged appearance. The bays (three in number) which these headlands semi-close, are all open about eight points to the south;—and from their exposed aspect to the most violent and prevailing winds and swell, during the greater portion of the year, are totally unsuited as anchorages, when the sea in these roadsteads is a sheet of foam, extending more than a mile to seaward.

General Description:—The anchorage of Portland Bay lies in lat. 38° 21′ 11″S, long. 141° 38′E., It may be estimated to contain an area of protected shipping ground of about 18 square miles—assuming the bay proper to be a line drawn from the Lawrence Rock, and terminating on the coast under the highland of Mount Clay, on its northern side,—in length eleven miles.

The limit of the actual Bay, however, is generally understood to be comprised between Lady Julia Percy Island on its eastern, and the Lawrence Rock on its western side—distant from each other seventeen miles, in the direction of E.$\frac{1}{2}$N. The former island in lat. 38° 25′ 45″S., long. 142° 2′ 35″E., is separated from the mainland by a channel four miles in width, and is distant from Portland, S.77°E., 25 miles. This island, being situate at the outskirts of the Bay, may be supposed to afford a certain amount of protection against the heavy sea rolling in during easterly gales. The extreme point of the mainland (visible) in the direction of N.4°E. distant 27 miles from the anchorage, is, however, the prescribed limit of the bay.

The Lawrence Rock has three hillocks. conspicuous from any point except that of north-west, from which quarter its appearance is that of a single flat-topped rock, with a scabrous

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abrupt outline. There is good evidence of this rock having once formed the extreme south-east angle of the promontary.

Lady Julia Percy Island is also flat-topped, with perpendicular sides, and is discernible from a ship's deck a distance of 10 leagues.

From Point Danger, distant from the town of Portland, 4 miles, the shore begins to slope gently to Blacknose Point, 1¼ miles, from whence to Observatory Point (on which a flagstaff has been erected) the coast assumes an abrupt, rocky aspect. Between these two points, having Point Blacknose as its south east boundary, has been fixed the Quarantine Ground.

From Observatory Point, which is 110 feet high, the shore falls down to a sandy beach, and trends to the main bight, or indent of the bay, half a mile in a westerly direction, upon which the town of Portland is situated. It then trends northerly along a sandy beach, for half a mile, to a bluff point, known as " Whaler's Look-out ;" passing another bluff 123 feet high, it curves round at a like elevation to the north-west, for another half mile, to Double Corner, a second elbow in the bay, from whence it trends in a north-easterly direction, on a low sandy beach, to opposite Lady Percy Island, being a circuit of 36 miles —this point being barely visible from the town of Portland.

Soundings.—Deep water is found close under Cape Nelson, and Cape Sir William Grant. About midway between the latter cape and the Lawrence Rock is a dangerous sunken reef, in from 4 to 7 fathoms water, over which the sea is continually breaking. Between this reef and the Lawrence Rock, are found depths varying from 8 to 11 fathoms, on a rocky bottom.

Surrounding the Lawrence Rock is a platform extending a short distance on all sides, only accessible in moderate weather. On the north west side, bordering on this level rock, is a depth of water varying from 6 to 10 fathoms. The water continues at this depth towards the main land, for three-quarters of a mile, when a sunken rock, in from 4 to 5 fathoms, appears about half a mile off Point Danger. This reef is not at all times distinguishable by breakers.

The depth of water along the coast towards the anchorage, is apparently of an even character, considering that the bottom is composed of an alternation of sand and rock the whole distance. As a rule, 6½ fathoms may be found one half-mile from the shore, very gradually deepening into the bay,

The portion appropriated as the Quarantine Ground indicates 7 fathoms water 1 mile from the shore, to which it gradually shelves on a bottom of sand, slightly intermixed with rock. This situation appears well adapted for the purpose, both on account of the protection afforded by Blacknose Point, from which also a short reef juts out, and from there being two small rivulets discharging themselves into the bight.

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The port anchorage, the centre of which is distant from the jetty five-eigths of a mile, has a bottom of sand on a bastard limestone (the debris of the cliffs north of the town), resembling marl. It is a calcareous sand—Captain Stokes states it to be mud —Mr. C. J. Tyers, clay.

In speaking, however, of the holding ground of Portland Bay, I am inclined to think that it is not so tenacious as that of either Port Fairy or Lady Bay, Warrnambool; but it may be considered, as it is now proved to be by experience, a safe, ample, and good anchorage ground.

The ordinary anchorage is comprised within a radius of about seventy acres, inclining gradually, from 3½ to 7 fathoms water.

At "Whaler's Look-out," visible reefs extend a short distance from the shore, and detached about a quarter of a mile easterly from the point, is an isolated rock in 11 feet water at low tide, with 3 fathoms surrounding it, over which a buoy to indicate its position has lately been placed.

The indent at Double Corner affords good and safe anchorage on a sandy bottom, in 5 fathoms water, 1 mile from the shore.

Between Double Corner and the Surrey River, a long dangerous rocky ground exists, called the Minerva Rocks, from half a mile to one mile from the shore, with a variable depth of from 1½ to 4 fathoms,—only in southerly weather, discernible by breakers. Beyond this, along the coast, the bottom is sand, with a very gradual inclination to the bay. Opposite the Minerva Reef, and extending about 3 miles into the bay, and trending in the direction of "Whaler's Look-out," the bottom alternates in rock, pebbles, and sand; the depths, however, appear regular, seldom varying half a fathom in a sounding taken every 10 minutes. The whole centre of the bay consists of a coating of sand, with an uniform surface throughout, varying not more than 1 fathom in a mile.

Having sounded at intervals of four minutes, over the whole area of the bay, no rocks have been discovered, except those previously known and mentioned in these notes.

Tides.—The tides in Portland Bay appear to be very irregular. being more or less influenced by the prevailing ocean swell and wind. Sometimes one tide happens in the 24 hours; at others, days have intervened without any perceptible rise.

JOHN BARROW, Assistant Engineer.

Sailing Directions for Portland Bay.—1. Ships bound to Portland, and making the land from the westward, should endeavour to sight the high land of Cape Bridgewater, Cape Nelson, and Cape Sir William Grant. These Capes, at a dis-

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tance of four or five leagues, as seen from the south-westward, form a cluster of high bold land,—the western part being covered with large white sand patches,—the centre high table land (Cape Nelson) and the eastern part (Cape Sir William Grant) trending low.

This eastern part of the cluster forms the southern extremity of Portland Bay, and it is fronted to the S.E. by a small group of high rocks named the Lawrence Isles; these will not be visible until within five or six miles, being hid by the high land of Cape Sir William Grant. These rocks extend rather more than two miles to the eastward of Cape Sir William Grant, and about a mile to the S.E. of a low point named Point Danger: there is a passage between, but it is very narrow, and close to the western side of the Lawrence Isles.

This passage should never be attempted, for it is full of sunken rocks, on which the sea breaks in southerly and south-west gales. Ships should, therefore, round the Lawrence Isles, passing to the eastward at a convenient distance, and then hauling up to the north-westward should the wind prove scant; as they proceed to the northward, the houses of the town of Portland will begin to open of Observatory Point which forms the southern point of an indent in this part of the Bay, about a mile in extent. Fronting the town, the soundings will be eight or nine fathoms. Crossing the Bay, if the wind is scant as before stated, ships may pass to the northward of the town until it bears S.W., then tack: the soundings will gradually decrease as they approach the shore, and a heavy ship may anchor about a mile from the town in seven fathoms. They should bring the jetty to bear west-by-south, and the Lawrence Isles south-east-by south, *magnetic*.

2. The Bay is very capacious, and by keeping the Lawrence Isles on a south-east-by-south line of bearing, vessels will have three miles of clear anchorage ground to the northward of the town, and two miles to the southward to Blacknose Point, the limit of the Quarantine ground. No hidden danger is known to exist in the Bay but the sunken reef off Whaler's Bluff at the northern extremity of the town: the Bluff is a range of high limestone cliffs, from which the Reef bears east about a quarter of a mile; there are eight feet of water on the Reef, and it is of small extent, having a deep channel between it and the Bluff: and the Bluff from this point trends to the north-west, forming a second indent of about two miles in extent, with good anchorage and regular soundings. The land from thence continues to trend to the north-eastward for about six miles, and then bends to the eastward; at this part it is distant from the Lawrence Isles about twelve miles. This may be considered the extent of the Bay in that direction: but there is ample space in the S.W. quarter of the Bay for any number of vessels to anchor in any depth of water suitable to size.

3. Ships bound to Portland, and coming from the eastward,

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should endeavour to sight the Julia Percy Island. It may be passed within half a mile,—and from that position, in clear weather, will be seen the high land of Mount Clay, which forms the north-east boundary of Portland Bay. The high land of Cape Nelson will also be visible, which forms the southern boundary of the Bay; a clear passage may be found between the island and the main of three miles wide; but it is not advisable for large vessels to pass inside, for a heavy swell from the south-west generally rolls in upon the coast; and frequent calms in summer make it unsafe, for the whole coast is fringed by a belt of dangerous rocks, with deep water close to the shore, on which a continual surf breaks. The latitude of this Island (southern extreme,) may be assumed as 38° 26′S. and longitude 142° 3′E. The latitude of the anchorage at Portland, from a number of observations, may be stated to be 38° 21′ 30″S. and the longitude from chronometer regulated at Port Dalrymple and several short runs, gives the anchorage 141° 38′ 45″E.

4. Commanders of ships may, without danger, provided the land has been made out before dark, stand safely into the Bay,—keeping the lights of the town, (which will be visible five or six miles) between the bearings of S.W. and N.N.W., which will give ample room and smooth water for working until daylight, or till they are boarded;—a boat will always be in readiness to afford assistance when required. The various headlands, on approaching this part of the coast are very conspicuous, and cannot easily be mistaken. The time of tide is very uncertain, being much influenced by southerly winds; but in fine weather, a regular tide runs along the whole coast from Cape Otway to Cape Bridgewater, the flood setting to the westward. Betwixt Cape Bridgewater and Cape Northumberland the tides meet, and, in stormy weather, create a very turbulent sea. The rise and fall of tides at Portland may be considered as four feet, and the time of high water on full and change days is twelve o'clock. The variation about 10° easterly.

JAMES FAWTHROP,
Harbour Master.

INDIAN OCEAN:—EASTERN ARCHIPELAGO.

HYDROGRAPHIC OFFICE, ADMIRALTY,
London, 3rd. *December*, 1857.

BANCA STRAIT.

Bank off Vierde Point, Sumatra.*—H.M.S. *Assistance*, when proceeding to the *northward* through Banca Strait, on the 25th September, 1857, suddenly grounded on the steep edge

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of the Flat, *which extends from the shore to the westward of Vierde Point*, that point bearing S.54°E., distant 4½ to 5 miles; off shore 3½ or 4 miles. Thirteen fathoms were obtained shortly before the vessel struck, and when aground there were only 3 feet about a cable's length a-head, or to the W.S.W.; 4 fathoms at 40 yards on the starboard beam; 2 fathoms on the port side; and 3 fathoms astern, the water deepening rapidly in that direction.

Caution.—Mariners should be extremely careful, when passing Vierde Point, to attend to the directions given for navigating this part of Banca Strait in pages 271, 272 of the *Seaman's Guide round Java*, and in *Horsburgh's Directory*, vol. II, page 173, both of which distinctly state that Vierde Point should be given a berth of 3 miles,—and when to the westward of it, it should not be brought to the eastward of S.E.½S.,—nor the shore approached within 6 miles.

[*All bearings are magnetic. Variation* 1° 15′*E. in* 1857.]

*See Admiralty Chart, Gaspar and Banca Straits, corrected to December, 1857, No. 2,149, in which this Shoal is inserted

OFFICIAL REPORT RESPECTING THE LOSS OF THE IRON SHIP *FUSILEER*.

THE following Report has been presented to the Board of Trade by Mr. Mansfield, the Liverpool Magistrate, and Capt. Harris, respecting the loss of the iron ship *Fusileer*, Capt. Carmichael, on a voyage from Valparaiso for Liverpool.

"Sir,—In accordance with the request of their Lordships, I have, with the assistance of Capt. H. Harris, held an inquiry into the loss of the ship *Fusileer*, John Carmichael, Master, in Bullslaughter Bay, near Milford Haven, on the night of the 13th Sept. 1857.

"The *Fusileer* was an iron ship of 503 tons register. She was provided with two compasses for steering,—one in the binnacle, and one in the mizen-top. The binnacle compass was provided with a patent adjuster, by which magnets fixed in a frame could be raised or lowered so as to adjust the compass to the local attraction of the ship, and so bring the binnacle compass in accordance with that in the mizen-top. This was done by the Master, or by the Mate under his directions, as occasion required. The compass in the mizen-top was transparent, and could be discerned from the deck by day, but it was necessary to send a man up to ascertain the bearing with accuracy during the night. There were two receptacles for the compass in the mizen-top, and the compass was shifted from one of these to the other as the ship tacked, starboard or port. The ship was also provided with two chronometers, which had given satisfaction on the two previous voyages. They both belonged to the ship. From private inquiry through Mr. Tyndall, I ascer-

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tained that they were fair good instruments, and had been purchased at the ordinary prices at Liverpool. The charts used in the *Fusileer* were Imray's, on a large scale, and printed in 1854. The hands numbered 19 all told, and the ship was well found in every respect.

"She left Valparaiso on the 26th of June, with a cargo of copper, for Liverpool. She made a good passage, but did not sight land from the time of her departure till she was lost. On the 9th or 10th of September she spoke a Dutch ship, the *Hugo Grotius*, from Batavia for Rotterdam. Upon comparing longitudes, the *Fusileer* was 10 miles to the east of the Dutchman's by one chronometer, and four by the other.

"At noon on the 13th the Captain took an observation, and found himself in lat. 50° 30′N., long. 8° 46′W. by one chronometer, and long. 8° 51′W. by the other. At 2 p.m. the weather set in cloudy; the wind was from the S. At 4 p.m. there was small rain, and the wind S. to S.S.E. At 8 p.m. it was thicker, with more rain. From noon to 8 p.m. the ship had made 74½ knots, by Massey's patent log, the course having been E.½N. by compass; the variation allowed was 26°W. The course was then changed to E.byN.½N. northerly. The ship continued on that course, running from 9 to 9½ knots, till she struck. During that time there was heavy rain. At 11.40 p.m. sail was shortened to take a cast of the lead. The sail taken off was the cross-jack and main-sail; the latter was hauled up all but the buntlines, when the look-out called "land ahead!" The helm was then put hard-a-port, the ship being on the starboard tack. She had the wind free, and the yards well in. She came round with head to wind, when she backed astern, and went with her heel upon the rocks. She then got sternway and backed out, with her head in-shore to the northward, her bows scraping round the rock. The Master tried to wear ship on the port tack, but in vain, as it appears the rudder was broken in striking the rock. An attempt was made to let go an anchor, but before this could be done, she struck again broad-side-on on the port side, with her head to the E. or S.E. After this the ship filled rapidly, and as no more could be done to save her, the crew and three passengers took to the boats, saving neither luggage nor other effects.

"It will be seen from the above, that the loss of the *Fusileer*, at Bull-slaughter Bay, was occasioned by a gross miscalculation, involving an error of more than 50 miles difference between her real and supposed position. The cause of the error can only be matter of conjecture, but it does not seem probable that it resulted from defect in the compasses, or the chronometers, or the instruments used in taking observations. Still less could it be ascribed to the set of the current, as neither the force nor the direction of that, could by any possibility have produced so great an effect. Least of all, in such a well-known locality, would any new and external magnetic attraction, be entertained as a cause of the wreck, by action on the compass, As, however, the weather was thick and rainy soon after the observation was taken, it is not impossible that there may have been fog banks at noon, and a false horizon may have been taken, which would give the observer a position very greatly to the westward of the real one. It only remains to consider whether, under all the circumstances, the Master is to blame. The error of observation is only conjectural, and, assuming it to have really taken place, it would be

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hard to condemn the Master for encountering an illusion which he could not have anticipated, when he thought he had a good observation.

"It is not, however, so easy to acquit him when soundings come in question. He had run from Valparaiso in a long voyage, from June to September, and at the time of the shipwreck, supposed he was going up channel. He had seen no light, and the weather was very thick. He alleges that had he taken soundings at 8 p.m., it would have told him little, as the depths at his real and assumed positions vary very slightly,—and not much more may have been ascertainable at 10 p.m., in respect of depth. At the latter hour, however, the armed lead would have shown him that, whether on the Irish or Welsh coast, he was deviating from his true course. In St. George's Channel he would expect mud at the bottom,—on either side he would expect gravel or coarse sand. The absence of this precaution proved fatal, and it is a precaution which a prudent Mariner should have taken, especially as it lay completely in his power, owing to the favourable state of the weather, and the circumstance that his Crew had not undergone any unusual work. It is for this reason that, with reluctance (as I believe him to be generally a deserving man, and good sailor) I feel obliged to report to the Board, that the *Fusileer* was lost by the default of the Master.

"I am, Sir, yours obediently, &c.

"J. S. MANSFIELD."

"I do not entirely concur in the finding of Mr. Mansfield, that the *Fusileer* was lost (in a penal sense) by default of the Master. A reference to the evidence, will show that it is possible many circumstances combined to occasion the loss of the ship. The Master may have been culpable in a minor degree in not laying his ship to on the night of the 13th Sept. considering the then state of the weather. But, referring to his high character for ability as a seaman, his previous knowledge of the St. George's Channel, and the absence of any cause to distrust his position, I think the merits of the case might be met by an admonition from their Lordships, prior to the renewal of his certificate. HY. HARRIS."

The Lords Committee of the Privy Council have directed the return to Capt. Carmichael of his certificate, with an admonition.

OFFICIAL REPORT RESPECTING THE LOSS OF THE SHIP *FALCON*, OF LIVERPOOL.

Aden. Nov. 26, 1857.

Sir.—The ship *Falcon*, of 1,075 tons, C. Hare, Master, from Aden for the Kooria Moorias, in ballast, was wrecked on the Arabian coast on the 17th instant, about 20 miles to the eastward of Howhta, in long. 46° 15'E. nearly. She was abandoned by the master and crew on the 19th instant, and they arrived at this port on the 20th inst. in their own boats. The master reported to me on the 21st, and entered his protest on the 23rd inst. The Political Resident directed the assembly of a Naval Court to report on

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the circumstances of the wreck and its abandonment. The proceedings of that court and a copy of the protest are herewith forwarded. The master, as representative of the owners, sold the wreck as it lay by public auction on the 24th inst. The sum realised by sale of the wreck is, 1,550 rupees, to which may be added the proceeds of the boats and gear, and a few stores brought from the wreck, amounting to 1,353 rupees, for which sums the master will account. It is only just to the Arabs on the coast to state that a letter has this day been received from the chief of the neighbouring tribe, reporting the wreck, and stating that he had set a guard over it to protect it until the orders of the Political Resident at Aden can be received. The ship is stated to be in the condition as left by the crew, and no plunder or demolition had been attempted.

I have, &c.,

J. J. COMBE, Captain,
Acting Assistant Political Resident, and
Junior Magistrate, Aden.

To the Secretary,
Board of Trade, London.

REPORT.

The Court, upon consideration of the circumstances, are of opinion the Captain could not have done otherwise, with sound judgment, than abandon the *Falcon*. It appears in the evidence, that the ship grounded on a bank on which there are overfalls, and which is not mentioned in the latest surveys, the soundings being very even and regular on the approach to the shore, unless where otherwise indicated. The *Falcon* was supplied with Horsburgh's Track Chart of the Indian Ocean only. The ship was sent on shore by the strong westerly current that prevails this season on the Arabian Coast, and which takes the line of coast near the shore, of which Captain Hare seems to be ignorant. He was also doubtless deceived by the appearance of the land, it being very difficult to judge the distance from it in hazy weather, as it makes in ridges, the higher range being visible 60 miles off in clear weather.

LEGAL DECISIONS.

COURT OF QUEEN'S BENCH.—*Alleged improper dismissal of a Captain.*—YOUNGHUSBAND *v.* POSNO :—Mr. Edwin James, Mr. Bovill, and Mr. Cleasby, were counsel for the plaintiff; Mr. Wilde and Mr. Rew appeared for the defendant.

This action was brought to recover compensation for the dismissal of the plaintiff, from the command of the S.S. ship *Prince Albert*. The defendant pleaded that after the plaintiff was appointed, he conducted himself so violently, and behaved so grossly, that it was necessary to dismiss him, and that from his intemperate habits, he was unfit to be entrusted with the command of a vessel. £ 60 was paid into court.

It appeared from the evidence of the plaintiff, Mr. Younghusband, that

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he had for many years been in command of vessels; about September last, he was out of employment, and was introduced to the defendant, who was the registered owner of the steamer *Prince Albert*, the property of the Belgian Transatlantic Company, then under tender to the East India Company, for the conveyance of troops to India. He was appointed to the command on the 29th of September, and on the 2nd of October signed the Charter, at a salary of £300 a-year, and 2 per cent. on the profits. The vessel lay at Woolwich, fitting out, until the 15th,—she then took some troops on board, and dropped down to Gravesend. On the 17th she arrived at Portsmouth; the Broker's agent then asked the plaintiff for the register and papers, on the plea that there was an alteration to be made in them. The plaintiff gave them up, and was then informed he should give up the command. He refused to do so unless some reason was assigned. He was offered £300 to leave quietly, but he refused, and only yielded when he was threatened to be forcibly removed. He swore positively that he was never drunk while at Woolwich, and that he was not of intemperate habits. The only person who was drunk at Woolwich was the purser, who had been appointed by the defendant, and whom the plaintiff was forced to dismiss. It appeared that while the ship was at Gravesend, the plaintiff had some words with Mr. C. J. Mare. He afterwards apologized, and they shook hands and had a glass of wine together, but when Mr. Mare was leaving, he told plaintiff he should not leave Portsmouth in the ship. He swore positively he was not intoxicated on that occasion.

Several witnesses were called to prove the skill and competency of the plaintiff, his extremely temperate habits and gentlemanly conduct, and that while at Woolwich, he was not once intoxicated or even the worse for liquor.

For the defence, it was urged that nothing but a strong sense of duty induced the defendant to act as he had done. He knew nothing of Mr. Younghusband, except from the character he had received of him, and when informed that he had been intoxicated on the 15th of October, he could do nothing else than dismiss him. His previous good or bad conduct was nothing to the issue.

Mr. Mare and some other witnesses were then called. They stated that the plaintiff had behaved in the most violent manner on the 15th of October, and was undoubtedly intoxicated on that occasion. Mr. Mare reported the circumstance to the defendant, and he felt obliged to remove the plaintiff.

Lord Campbell said the defence set up was, that the plaintiff was not fit, in consequence of intemperate habits, to have the charge of the vessel. If the jury should be of that opinion, they would say that the defendant was justified in the course he had taken; but was that defence made out to their satisfaction? Capt. Younghusband himself stated that on the day in question he dined with the officers of the Artillery on board his ship, and that he had only taken a moderate quantity of wine, and Mr. Clarke, the clerk of Arraigns at the Central Criminal Court, and other gentlemen who had known him intimately for many years, gave evidence that he was a gentleman of most temperate habits. To support the plea of intemperance they called Mr. Mare, who stated that he had been grossly offended by Captain Younghusband; but the Captain made a most ample apology, they shook hands, sat down, and

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took wine together, and after that Mr. Mare made a report to the Owner of the ship that the Captain was in state of intoxication when he visited the vessel. He (the learned judge) owned it seemed to him that there was nothing which could, to the mind of any reasonable man, justify such conduct, and that it was most discreditable.

The Jury found a verdict for the plaintiff, damages £600, including the £60 paid into court.

NAUTICAL NOTES.

Siam:—Important Notice respecting the River Meinam and Port of Bankok:—Masters of ships are prohibited, under a penalty of from 80 to 200 ticals, from throwing over ballast, sand, stone, earth, &c., anywhere near the bar of the river Meinam, where the water does not exceed 7 fathoms in depth, or anywhere in the bed of the river. Masters of vessels trading at the port of Bangkok, will also be required to prohibit their crews from going on shore with knives and other weapons.

Alterations in the Customs Regulations at St. Petersburg, as affecting Foreign going Vessels.—With a view to facilitate the navigation between St. Petersburg and Foreign countries, the Custom House formalities upon the arrival, and at the departure of vessels, as also the verification and the *visa* of their papers, and the medical examination of the crew, may be fulfilled in the inner roadstead of Cronstadt, near the Custom's guard-ship, and not near the guard-ship of the outer roadstead of the harbour.

The Custom-house inspection of vessels near the guard-ship at the mouths of the Neva, is abolished, and, as a sanitary measure, all vessels arriving from abroad, are required to hoist on one of their masts, a red flag, as a signal to the guard-ship of the outer roadstead of Cronstadt, that they are provided with a Bill of Health delivered by the Russian Consulate of the port of their departure: vessels not being so provided with a Bill of Health must stop near the above-mentioned guard-ship, and await the directions of the maritime authorities; moreover, vessels, without exception, must stop near the guard-ship, when they perceive the pilot-flag hoisted on one of its masts, which will signify that vessels are not permitted to enter the inner roadstead of Cronstadt, on account of its crowded state, or for other causes.

Prussia:—Ship-masters fined through the carelessness of Brokers:—Two British Ship-masters having, under the respon-

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sible declaration system, been put to considerable inconvenience and subsequently fined, owing to the mis-translation by the brokers, of an expression in their bills of lading, H.B.M.'s Consul at Konigsberg, W. T. Hertslet, Esq., writing on this subject, says :—

"It has occurred to me that, as these mistakes and punishments of British Masters arise, not from any fault or blunder of their own, but from the carelessness of the brokers, or clearing-houses at Pillau, who are employed and well paid for doing the ship's business, British Shipmasters should, on their arrival at a Prussian port, where these responsible declarations are required, only employ such brokers or clearing-houses as will undertake to pay for any or all fines and penalties which the Prussian Custom-house may enforce."

New Commercial Code of Signals.—At all the Liverpool and Holyhead stations, instructions have been given by the Liverpool Dock Committee to report communications from ships made through the medium of the New Code of Signals, and ships are recommended to hoist their numbers by it off Holyhead, and keep the signals flying till they enter dock, as in the event of not being reported off Holyhead, they will be seen off the nearer stations.

Russian Notification respecting the Asiatic Coast of the Black Sea.—The Ports, Bays, and Havens on the Asiatic Coast of the Black Sea, with the exception of Anapa, Soukoum-Kalé, and Redout-Kalé, are prohibited to foreign vessels. Establishments for quarantine and customs exist at these three ports. Consequently, for the moment, they are alone open to foreign vessels.

To certify the regularity of their destination, foreign vessels are bound to have their ship papers *viséd* by the Russian Consular Agents.

Any attempt of the Masters of foreign ships to communicate with the coast—with the exception of Anapa, Soukoum-Kalé, and Redout-Kalé—will render it necessary for the Russian authorities to have recourse to those measures of repression established against smuggling, against every infringement ofthe sanitary laws. Those who expose themselves thereto must take the consequences of their conduct upon themselves.

Decree by the Government of Tuscany relative to the Import of Salt into that Duchy.—All vessels of 80 tons and under, laden with foreign Salt are enjoined to keep away from the coast, out of the range of cannon shot, on pain of seizure and confiscation.

Vessels of more than 80 tons, laden with foreign Salt, may be admitted into the ports of Leghorn, Porto Ferrajo, Piombino,

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and Santo Stefano, but in no other port of the Grand-Duchy,—except when vessels through stress of weather, &c. (to be legally proved,) may be constrained to seek shelter in other ports; the captains in such cases to be strictly bound to declare immediately the quantity of of Salt on board, either for trade or for the use of their respective crews.

REWARDS AND TESTIMONIALS.

Capt. T. F. Haines, of the barque *British Empire,* has been presented with a Gold Signet Ring and Testimonial, from the emigrants conveyed in that vessel to Portland Bay, as a token of their respect and esteem, for his kind and courteous treatment of them on the voyage.

Capt. John Blampied, of the *Wave Queen,* of Jersey, has been presented with a Silver Teapot and Watch, for his heroic conduct in rescuing 22 of his fellow-creatures from on board the steamer *Briton,* when in a sinking state, during a heavy gale, off Ushant, on the night of the 11th of January, 1857. The Shipwrecked Fishermen and Mariner's Royal Benevolent Society, has also presented Medals to Capt. Blampied, and Romeril, the seaman who accompanied Capt. Blampied in the *Wave Queen's* boat, to the rescue of the *Briton's* crew.

A Testimonial has been presented to **Capt. S. H. Wright,** of the Australian R. M. Steam Co.'s ship *Australian,* who arrived at Calcutta on the 30th of October, after a passage of 76 days from England, with the Head-Quarters of the 42nd Royal Highlanders.

A Testimonial has been presented to **Capt. Wilson,** of the *Great Britain,* of London, by the non-commissioned officers, &c., of the Royal Canadian Rifles, on the recent arrival of that corps at York Factory, in Hudson's Bay, *en route* for the Red River Settlement.

The Committee of the Shipwrecked Mariner's Society have given the Society's Gold Medal to **Capt. A. C. Clarke,** of the *Lord Burleigh,* for his gallant conduct in saving 21 lives, the crews of the barque *Eleanor Lancaster* and schooner *Rover,* in Newcastle Bay, (N.S.W.), in the November of 1856,—conduct which was also rewarded by the presentation of a Silver Medal, from the corporation of that place.

The Master of the schooner *Zibiah,* **De Gruchy,** of Jersey, has been awarded the Gold Medal of the Life-saving Association

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at New York, besides a sum of money, for rescuing 13 men of the crew of the United States ship *W. G. Rogers*, which had sunk at sea.

The Board of Trade have directed that a Gold Chronometer shall be presented to **Edwin A. Garrish**, master of the *Sagamore*, of Portsmouth, New Hampshire, for the protection and kindness shewn to the master and crew of the *Clio*, of Shields, which vessel was fallen in with on the 15th September last, in lat. 47° 30′N., long. 40° 50′W., waterlogged.

The *Walton Muncaster*, of Whitehaven, was wrecked on a reef near the port of Chânaral on the 27th June last, several of the crew were drowned, and others were struggling for their lives amongst the breakers, when they were rescued (after being immerged in water for upwards of two hours and a half) by the masters and crews of the *Dennis Brundrit*, of Liverpool, and of the Hamburg barque *Helene*, but not without the loss of some of the seamen belonging to the *Dennis Brundrit*, who were washed from their boat.—The Board of Trade, to mark their approbation of the conduct displayed on this occasion, have directed that a Telescope be presented to the master of the *Helene*, and a gratuity to each of the crew; a Silver Medal to **Lewis Whiteway**, the master, and **John Carnell Beer**, the mate of the *Dennis Brundrit*, and a gratuity to the families of the crew who perished on the swamping of the boat.

The Board of Trade, in approbation of the services rendered by **Thomas Quayle**, master of the *Brilliant*, of Peel, in saving the lives of the master and crew of the *Exchange*, of Shields, which vessel was found in a sinking state during a gale of wind, on the 3rd of October last, have awarded to him the Bronze Medal for gallantry in saving life at sea.

CERTIFICATES SUSPENDED.

At a meeting of the Local Marine Board for the port of London, held on the 17th Dec., charges of gross neglect of duty, and frequent acts of drunkenness were preferred by Mr. Charles M. Sughrue, owner of the *Hopewell*, against William Lawrence Eastham, late Master of that vessel, during the voyage from London to Newcastle and Callao, and back to London. The charges of drunkenness having been fully proved —the Board of Trade have directed that the recommendation of the Local Marine Board, for the Suspension of the Certificate of Competency No. 4,964, belonging to the said William Lawrence Eastham, for Nine Months, should be carried into effect.

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Johnson William Doyle, Master of the *John Sugars*, of Lynn, was indicted at the Central Criminal Court, for a series of aggravated assaults on Robert Eastwick, an apprentice, also belonging to the same vessel; and, having been found guilty and sentenced to three months imprisonment—the Board of Trade have directed that the Certificate of Competency as Master, No. 7,179, belonging to the said Johnson William Doyle, should be Suspended for Twelve Months.

At the Meetings of the Local Marine Board of Plymouth, held on the 23rd September, 21st October, and 18th November, charges of gross misconduct and drunkenness were preferred by Mr. William Sheppard, the owner of the *Conrad*, of Liverpool, against William Turner, the Master, thereof, and the Local Board having reported to the Board of Trade, that the charges had been fully proved,—the Board of Trade, in consideration of the repeated adjournments which took place, have directed that the Certificate of Competency, No. 9,182, belonging to the aforesaid William Turner, be Suspended only for Three Months.

At a Naval Court held 14th November, 1857, at the Vice Consulate Galatz, Henry Wakefield, Mate of the *Asia*, of Wexford, was tried for having at Reni, on the 10th November, abused the Master of the said vessel and broken the cabin door. The charges being proved, the court sentenced him to be dismissed the ship, imprisoned for three days, to pay the Master £ 2 for damage and expenses, and to have his Certificate of Competency suspended for Two years.—The Board of Trade, in consideration of his being a good seaman, and not generally an intemperate person, also his having been fined, imprisoned, and discharged his ship, have directed that his Certificate of Competency, No. 13,641, shall be Suspended for One Year only.

CERTIFICATES CANCELLED.

A Naval Court, under the provisions of the Merchant Shipping Act, 1854, was held at Monte Video, on the 7th September last, for the purpose of enquiring into charges of drunkenness preferred against Charles Frederick Starke, Master of the *Ally*, of Southampton, by the mate and crew of the said vessel. The Court considered the charges of drunkenness fully proved, and deemed it necessary for the interest of the owners and the safety of the ship and crew, to remove the said Charles Frederick Starke, the Master, from his command. and declared him to be suspended.—From the nature of the evidence given in this case, the Board of Trade have directed that the Certificate of Competency, No. 1,520, belonging to the said Charles Frederick Starke, shall be Cancelled.

A Naval Court, under the provisions of the Merchant Shipping Act, 1854, was held at the Chincha Island, on the 9th October last, to investigate charges of drunkenness preferred by the officers and crew of the *Golconda*, of Liverpool, against Joseph Francis the Master thereof.

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Evidence having been given, the Court unanimously concurred in the opinion that the charges had been fully proved, and adjudged Joseph Francis to be dismissed from the ship.—In consequence of this decision, the Board of Trade have directed that the Certificate of Service, No. 39,741, belonging to Joseph Francis, shall be Cancelled.

A Naval Court under the provisions of the Merchant Shipping Act, 1854, was held at the British Consulate, St. Thomas, West Indies, in November last, to investigate and adjudicate upon charges of repeated acts of drunkenness preferred against Edward Mackie, Mate of the *Mary Allan*, of Glasgow, by William Hannington the Master. The charges having been fully proved the Court directed the dismissal of the accused from the ship, and that he should pay the expences of the investigation.—The Board have also directed that the Certificate of Service, No. 63,579, belonging to the said Edward Mackie should be Cancelled.

CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from November 25th to December 25th, 1857.

England,—Mouth of the River Thames,—Sea Reach.—The Yantlet Middle having extended itself to the *northward*, by which the Channel between that Shoal and the River Middle, has become much contracted—a Beacon, with a triangular top, surmounted by a Ball, has been placed upon Canvey Island, about a quarter of a mile to the eastward of Scar Houses, to facilitate the navigation of the said Channel.

Caution.—Masters, Pilots and others having charge of deep ships, are therefore to observe, that the said Beacon in line with the *south* leg of the Chapman Lighthouse, bearing N.W. by W.½W. by compass, will lead into the best water between the above named shoals, viz., into a depth of 23 feet at low water spring tides.

England—S. Coast:—Dover,—Buoys at the Admiralt. Pier Works:—The Contractors for the Admiralty Pier Works at Dover, have caused the undermentioned Buoys to be placed near these works, viz.:—

A White Buoy, with the words "Dover Pier" in black letters thereon, 250 feet *south* of the outer end of the stage.

A Cylindrical Black Buoy, with the words "Dover Pier" thereon, in white letters, and fitted with a staff and vane, 1000 feet *west* of the end of the stage, and

A Cylindrical Black Buoy, marked with the same words in

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white letters, the same distance from the stage, and 100 feet *north* of the last-named Buoy.

England—Scilly:—Additional Lighthouse off the Scilly Islands:—The Lighthouse which has been for some time past in course of erection, upon the Bishop Rock,—the south-westernmost of the Scilly group, bearing W.$\frac{3}{4}$N. by compass, four miles distant from St. Agnes,—being now far advanced towards completion,—the Light will be exhibited therefrom, on or about the 1st September, 1858.

Mariners are to observe, that the Bishop Rock Light will be a Fixed Bright Light of the first order, and will burn at an elevation of 110 feet above the level of high water, and illuminate the entire circle, and will be visible in clear weather at a distance of about 14 miles.

England—E. Coast:—Buoyage of the River Tees:— The Sands at the entrance of the River Tees having so far shifted, as to form a more direct Channel into that River, *further to the eastward*,—on or about the 1st January, 1858, the following changes will take place in the position of the Bran Sand Lights, and of the Buoys, viz.:—

The present Lights will be moved from the Bran Sand to the opposite side of the river, and placed on the Seal Sand, and will be exhibited in line, bearing by compass S.W.$\frac{3}{4}$S. inwards.

A corresponding alteration will be made in the positions of the four following Buoys, viz.:—The Bar Buoy, (chequered Black and White,); No. 1, Black Buoy; and Nos. 1 and 2, Red Buoys;—leaving the Black Buoys on the *starboard* hand on entering, and the Red Buoys on the *port* hand, as heretofore.

Mariners are hereby cautioned to observe that the old light-houses, still remaining on the Bran Sand, are not to be used as day-marks.

Further particulars will be published after the above-named alterations have been effected.

England—E. Coast,—Stanford Channel:—The Black Buoy at the *southern* entrance of the Stanford Channel, called the Holm Tail Buoy, has been removed, and an eight feet Spiral Buoy, painted Black and White in stripes, and surmounted by a Staff and Triangle, has been placed in lieu thereof.

Shetland Isles,—North Unst.—Fixed White Light on Muckle Fluggu:—A notice of this Light appeared in the *Mer. Mar. Mag.*, Vol. IV, p. 374: it stands in lat. 60° 51′N., long. 0° 53′W. of Greenwich, nearly; the *Variation* of the compass in that locality is 25°W.

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Norway—W. Coast:—Flashing Light on Hogsten,—Bred Sound:—On and after the 25th day of November, 1857, a Light would be established on Hogsten Point, Godo Island, Bred Sound.

It is Fixed, with a Flash *once every three minutes,* and visible from all points of the compass towards the fairway. It is placed at an elevation of 39 feet above the mean level of the sea, and should be seen in clear weather at a distance of 13 miles. It will be exhibited from the 1st of August, through the winter, until the 16th of May.

The lighthouse is a circular tower, built of stone, and coloured White. It stands in lat. 62° 28′N. long. 6° 1′ 30″E. of Greenwich.

Australia,—E. Coast.—Fixed Light at Newcastle Harbour:—On and after the 1st January, 1858, a White Fixed Light will be exhibited all night, from the lighthouse recently erected on Nobby Head, at the entrance of the Port of Newcastle, when the coal-fire, hitherto shown on the main land there, will be discontinued.

The light-tower stands in lat. 32°55′ 20″S., long. 151°48′50″E. of Greenwich.

Australia—E. Coast,—Proposed Additional Light for Port Jackson:—In addition to the Revolving Light now exhibited on the Outer South Head, Port Jackson, Sydney, it is intended shortly to establish a White Fixed Light on the Inner South Head, at the entrance of that harbour.

The new Light will be placed at an elevation of 90 feet above the sea at high water, and should be visible from the deck of a vessel in ordinary weather at a distance of 14 miles.

It is expected that the Light will be exhibited early in the year 1858.

Further particulars, as soon as they are received, will be given hereafter.

Atlantic Ocean,—United States:—Fixed Light at Block Island, Rhode Island:—On and after the 28th day of October, 1857, a *single* Light would be exhibited from the lighthouse recently built on the extreme *north* point of Block Island, at the entrance to Long Island Sound, Rhode Island, to replace the two Lights which were shown at one third of a mile to the southward of this position, when the temporary Light, exhibited during the erection of the new building, would be discontinued.

It is a White Fixed Light, at an elevation of 60 feet above the sea at high water; it illuminates an arc of the horizon from E.S.E. round northerly to S.W.byS., being intercepted by the Island for the remaining points of the compass, and it should be

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visible from the deck of a vessel in ordinary weather at a distance of 13 miles.

The light-tower is 14 feet square, with its base 10 feet above high water, and has a keeper's house of two stories attached. The whole building is of brick, and coloured White.

[*Bearings are magnetic. Variation* 8°W. *in* 1857.]

Mediterranean—Coast of Tuscany—Lights on the Breakwater at Leghorn:—On and after the 1st day of December, 1857, the following lights will be exhibited from the Breakwater and Jetty now in course of construction at the port of Livorno or Leghorn.

1. A Fixed Red Light will be shown at the *southern* head of the curved Breakwater, at 43 yards to the *northward* of the outer blocks of stone which appear above water. It will bear from the present Faro or Light-tower of the port, W. 7° N. or W. $\frac{3}{4}$N. distant 440 yards.

2. A Fixed Green Light will be shown at the *north* end of the same curved Breakwater, which will bear from the existing mole head of the port, N.53$\frac{1}{2}$°W. or N.W.$\frac{3}{4}$W., distant 480 yards.

3. A Fixed White Light will be shown from the *south-west* extremity of the straight Jetty, which is now in course of erection on the *north* side of the port of Leghorn; and it will be moved outwards as the works advance.

All the above Lights will be lighted from sunset to sunrise, except when the state of the sea will not admit of access to the heads of the unfinished jetties. In this special case a *single* Fixed White Light will be exhibited from the head of the present Mole, which with the existing Faro will indicate the points which serve as a base to determine the position of the ends of the above-mentioned curved Breakwater.

The height of the Lights above the level of the sea, is not yet determined upon.

[*All bearings are magnetic. Variation* 15$\frac{1}{2}$°*W. in* 1858.]

NEW BOOK.

THE PRACTICE OF NAVIGATION AND NAUTICAL ASTRONOMY, by Henry Raper, Lieut. R.N., F.R.A.S., F.R.A.G. *Sixth Edition.* J. D. Potter, 31 *Poultry*, and 11 *King Street, Tower Hill.*

We announce with pleasure a new issue of Lieut. Raper's book, which should take the first place in the library of every British Seaman; its excellence has long been recognized, by those who are capable of appreciating a *sound and carefully written*

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work on Navigation,—and it should have a far more extensive circulation in the merchant service than it has yet attained. The Theory of Navigation is, however, required, before it can be said we have a full treatise on the subject, and we hope that Lieut. Raper will be enabled, at no distant period, to complete the work he has so ably begun—it could not be in better hands.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, in December, 1857. *Sold by J. D. Potter*, 31 *Poultry, and* 11 *King Street, Tower Hill, London; and the principal Chartsellers in the Kingdom.*

		s.	*d.*
Nova Scotia.	Whitehaven Harbour. Capt. Bayfield, R.N. 1855. ...	3	0
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Tide Tables, *much improved*, and Edited by John Burdwood, Esq. R.N. 1858..		1	6
Hydrographic Notice.	Indian Archipelago	0	6

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

Letters partaking of the character of Advertisements cannot be inserted

All communications to be addressed "Editor of the Mercantile Marine Magazine, *care of Mr. W. Foster*, 114, *Fenchurch Street, London.*" ***N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication but as a guarantee of good faith.***

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THE

MERCANTILE MARINE

MAGAZINE.

FEBRUARY 1858.

THE COMPASS QUESTION.

The Official Reports respecting the loss of certain vessels, during the last few months, in which such loss has been attributed to the errors of the compass, and the letter which we subjoin, from a Captain of considerable experience in these matters, call for a few brief remarks on this important subject.

1. With regard to the Compass as an instrument of Navigation. Professor Barlow, several years ago, when directed by the Board of Admiralty to report on the state of the compasses furnished to the Royal Navy, said, "that at least one-half of them were mere lumber, and ought to be destroyed." This is an expression which applies with equal force to a very large proportion of the compasses carried to sea in the Merchant Service. Of the manufacturers, many, who undertake to make compasses, are quite unable to tell what are the characteristics of a good instrument for sea-going purposes—it is sufficient for them that they attach a magnetic needle to a card, which is poised on a central point, within a brass or wooden bowl, the article is turned out of hand, dignified by the appellation of a compass, and can be had *cheap*, a great recommendation to very many purchasers, who, provided they have on board something *like* a compass, give very little attention to the quality. In fact while we are ready to admit that we know makers who can produce very good instruments, provided they get adequate prices, we speak advisedly, when we say that the lives of a vast number of Her Majesty's sea-faring subjects are jeopardised, by having for their guidance across the deep, a thing very little better than a toy. It will scarcely be credited, but we can vouch for the truth of what we state, that on comparing two compasses with a good

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azimuth on shore, N.3°E. of the one and N.5½°E. of the other card, indicated the *magnetic north*—this arose from the peculiar form of the needle. We have also seen the lubber's line of a compass, directed towards the fish-davit, *i.e.* 4½° to port, from where the binnacle stood.

2. On board iron ships and steamers the *position* of the binnacle is of the utmost consequence—two or three feet more forward, or a slight elevation may frequently be the means of reducing a very large error. But in building and finishing a vessel, the position of the binnacle gets the last attention. Provided a place is left, such, that the steering compass can be seen by the helmsman, it is deemed sufficient,—a companion or a skylight often precludes the possibility of removing it. We know a case in which a steering binnacle was placed in close proximity to a large mass of iron, simply, because in that position, it covered an air-hole in the deck.

3.—*The Adjustment of Compasses.*—Nearly all steamers employed in the Coasting trade, as well as those engaged on short voyages to the Continent, have *all* the compasses adjusted,—while, in those trading to America and that go to the southward, magnetic compensation is applied only to the *steering* compass,—or perhaps one other. Of all the different methods that have been introduced or *patented*, none that we have seen is so simple, nor, in our opinion, can be compared with that proposed by the Astronomer Royal, and which is the only plan adopted in the Port of London. It consists in placing a magnet (or magnets) in the athwart-ship direction, fixed at a distance determined by trial, for correcting the deviation when the ship's head is N. or S.;—a magnet (or magnets) in the fore-and-aft direction, also determined by trial, for correcting the deviation when the ship's head is E. or W.; and by a mass of unmagnetized iron, (chain in boxes fitted to the binnacle,) at the same level as the compass, in the athwart-ship line, or in the fore-and-aft line, according to circumstances, (usually in the former position,) also at a distance determined by trial, for correcting the deviation when the ship's head is N.E.—S.E.—S.W.—or N.W.

We know that many Captains dislike the chain-boxes, which they say "are generally in the way,"—but if they wish for a *correct* adjustment of their compass, these chain-boxes (containing soft iron) *must* be used for the compensation of the "quadrantal deviation,"—and without them, whatever they may be told to the contrary, and although they may not be furnished with a deviation card, on the plea that the compass is perfectly adjusted, they must always suspect that such is not the case. Further more, "theory and practice combine to prove, that when the chain-box compensation is properly applied, no further change in it is required whatever be the voyage, and the Liverpool Compass Committee feel confidence in expressing the opinion, that it should never be neglected. The chain-boxes at present in use, are seldom large

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enough to correct more than 3° or 3½° of quadrantal error. They may, with advantage, be made of twice their present length. The increased length would also tend to correct a portion of the errors which generally arise *from heeling*".*

4. *Certificates of Adjustment.*—This is a very important subject, and one on which we are led to believe, *the law is constantly evaded.* In the Merchant Shipping Act, 1854, sec. 301, we find the following passage :—

" Every sea-going Steam ship employed to carry passengers shall have her Compasses properly adjusted from time to time; such adjustment * * * * to be made to the satisfaction of the Shipwright's Surveyor, and according to such Regulations as may be issued by the Board of Trade."

Again the 6th declaration of the shipwright surveyor, states, that " the compasses have been examined and adjusted to his satisfaction."

Now the evasion on this head to which we refer, takes place thus: generally twice a year, about the beginning of May and November, the compasses of iron steamers *carrying passengers,* are sent to the respective houses that undertake to adjust, who send back a certificate to the effect " *that the compasses have been examined and repaired, and are now in good order.*" Surely such a certificate as this is no more that should be in the possession of *every* vessel, at the same it will be seen that it bears no reference whatever to the *adjustment*—a point on which the law is very precise. *The certificate is thus clearly an evasion,* and has even been known to be furnished, when the vessel for which it is intended, has been on the ways undergoing repair.

It is a subject that the authorities should enquire into; at the same time it appears strange to us why iron ships and steamers, carrying cargo only, should not be included in the half-yearly survey, inasmuch as our estimation the lives of those who are employed in the navigation of the vessel, ought to be taken into consideration as well as the lives of passengers.

We subjoin the letter of our correspondent :—

" Ship Owners and especially Steam Ship Owners not long since complained to the Board of Trade, of the existing Shipping Laws, which they state rendered them liable for damages and accidents, over which they have no control. It naturally causes the enquiry, as to whether they take the necessary precautions and care, in circumstances that come under their own immediate control. We have no hesitation in stating that the generality of them do not; and as iron-ships, and steamers, are on the increase, and likely to monopolize the greater part of our passenger and carrying trade, it is a subject which requires immediate attention. Take for instance the Ship's compasses. Every one acquainted with iron shipping is aware

* Report of the Liverpool Compass Committee.

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that the greatest care and attention are required, not only in the adjustment of the compasses, but also in the placing of the Binnacles, yet the most important part of the vessel's equipment, is treated with the greatest contempt both by builders, and owners.

It is notorious that in the North of England, where a great proportion of our iron ships and steamers are built, equipped and sent to sea, the vessels are swung and adjusted a few hours before starting in a small dock in close vicinity to iron bridges, iron screw Colliers, and with the additional advantage! of immense *Iron Buoys* with which to warp round.

Can any one wonder at accidents occurring under such circumstances. Let the person employed be ever so competent or scientific, it is impossible for him to adjust a vessel's compasses fit for sea, in such a position. We know a case where the vessel was finished adjusting in Sunderland South Dock, and pronounced ready for sea, at 9 a.m. At noon of the same day, she was fifteen miles from port, and the vessel's head being put to the sun or true south, one compass pointed N.E., and the other W.½S. In most cases the person whose charges are the lowest, gets the job; being indifferently paid, he of course hurries over it as much as possible, paying little or no attention to the position of the binnacles.

In our southern Ports, even at London, things are very little better, although every facility is to be obtained at Greenhithe, where buoys are laid down, for the use of Merchant Vessels, requiring adjustment. Owners think that a vessel once adjusted, requires no further attention on their part, simply because an adjustment requires time and money. Persons unacquainted with the system pursued, would naturally be surprised, and fancy that the commanders would be aware of the state of affairs, and having to go to sea in the vessels, would take the necessary steps to remedy it. Many try to do so but what is the consequence? Captains who request an occasional adjustment of compasses which they know to be in error, are looked upon as troublesome men, who are always running their employers into unnecessary expense,—and have been superseded for insisting upon an adjustment, thus losing their situation for doing what is simply their duty. If one commander objects, there are plenty of others whose poverty compels them to take all risks; and so the thing continues, and will do so, until the Board of Trade take effectual measures to remedy the same.

That there are many of our Steam Companies to whom these remarks will not apply, no one can for a moment doubt, who has seen the creditable and efficient manner in which their vessels are equipped and sent to sea. But that there is a very great proportion of our iron ships sent to sea with compasses unfit for service, and with gross known errors, those who serve in them can testify; regard for their situation keeps them silent, as

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there are hundreds of others who would take the risk for the sake of the appointment."

ABSTRACT OF LOG OF THE *WATER WITCH*,

DURING A CYCLONE IN THE CHINA SEAS,

September 2ND TO 9TH:—WITH REMARKS BY S. P. HALL.

Wednesday, September 2.—Commences with fine weather and light airs from N.W. to N.E.: noon, lat. 26° 14′N., long. 120° 50′E. Aneroid 29·50. Shortly after noon observed the glass to be falling, and a heavy long swell rolling up from the eastward, in which direction we observed the clouds banking up; wind steady at N. and N.E., and freshening; standing to the eastward, under all sail to get more sea room. Midnight, stiff breeze N. by E. Aneroid 29·20.

Thursday, September 3.—Commences with fresh breeze and squally,—wind N. by E. Daylight, blowing a gale, ship under close reefed top-sails and fore-sail,—steering E. Aneroid 29·16: swell increasing from the eastward. Noon, Aneroid 29·12, lat. 26° 25′, long. 122° 23′; wind increasing rapidly. Furled fore-sail and hove ship to under close reefed fore top-sail, top-mast and mizen-stay-sails. Down top-gallant yards and masts, secured all furled sails with extra gaskets and lashings, and made everything snug about the decks, and prepared for a Typhoon. 6 p.m. Aneroid 29·00, strong gale, and a tremendous sea on; little ship behaving well, though at times half buried. 9 p.m. glass falling fast; being now 28·60, dared not attempt to take in the top-sail, which at 10 p.m. blew clean away. Aneroid 28·25, falling at 11 p.m. to 28·00 and blowing a hurricane at N.; both stay-sails now disappeared, also the lee-quarter-boat. The roar of the wind at this time was truly appalling, and the sea like a boiling cauldron, the ship's lee rail under, the spoon-drift absolutely blinding, and the crew not being able to stand at the pumps, got out of sight somewhere. Midnight, blowing still harder and pitchy dark.

Friday, September 4.—Shortly after midnight it fell in a *few moments, stark calm*, and instead of the howling tempest which we could still hear in the distance, the screaming of thousands of birds was an agreeable change; they were evidently in a state of great alarm, and falling on board in great numbers. Seized the opportunity of the lull, to bend a new stay-sail, and got it set in a *few minutes*. The sea was now more tumultuous than ever, falling on board in all directions, and washing away water tanks, spare spars, and guns, the breechings of which we were obliged to cut to let them go overboard; deck-pipe covers washed away, and much water getting below; crammed in blankets and anything we could

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get hold of; found the stern-ports partly stove in, and the cabin full of water; Captain and carpenter engaged in securing them. During the time the calm lasted, which may have been 10 or 20 minutes, observed the Aneroid to be 27·90. The ship surrounded by a dense black cloud like a wall, about 40° high and apparently close to us, while over head the sky was most brilliant, the stars shining with intense brightness, twinkling so as to dazzle the sight, the sea at the same time rising in all directions, and falling on board in immense masses, threatening to stave in the decks, made our situation awful in the extreme: it seemed as if we were at the bottom of a yawning gulf, the mouth of which was just ready to close over us. But we had no time for reflection, for, in an instant, with a sudden roar, far exceeding the loudest thunder, the wind came down on us at south, the ship's head being west, and the new stay-sail at once disappeared; the ship on her beam ends: the crew intensely terrified, and calling on the Prophet, and indeed, our position now was truly alarming; the wind was no longer like wind, but seemed like the howling of millions of demons trying to out-scream one another and lashing each other with whips. The sails now began to get adrift from the gaskets and lashings, and soon nothing but a few rags were left; the other quarter-boat disappeared,—and the tiller worked off the head of the rudder, which jerking about from side to side threatened to tear off the stern-post; drove down pieces of wood as well as we could to endeavour to chock the rudder; ship down to her hatches in the sea, expected she would founder; attempted frequently to cut away the rigging, but were unable to do so from the difficulty of holding on, and the violence of the wind was so great that it was imposible even to hold up your hand; on one occasion during a partial lull, the chief mate made a blow at the rigging with a sharp axe, but he could not bring the edge down, and the axe was blown out of his hand.

From 2 to 8 a.m. the Captain and chief mate under the weather bulwarks, feared the ship was making a great deal of water, as she appeared to be almost buried,—and the rudder thumping heavily; expected the ship to founder every moment; the wind continued, the whole time, screaming and howling most awfully, and quite beyond the power of description.

About 8 a.m. observed that the sky cleared a little in the S.E. quarter, the Aneroid shewing 27·86; this was the lowest observed. At 10, moderating a little, succeeded in getting some of the men to the pumps.

Noon, glass rising, wind moderating, but the sea running in all directions, deluging the ship fore and aft. Having been pumping two hours, ventured to sound the well and found 3ft. 4in. —pumping up sugar and water: p.m. moderating fast; some hands employed lashing a spar to the broken rudder-head for a

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tiller; mate and gunner aloft cutting away the remnants of the sails from the yards; succeeded in bending a fore-topsail, when, finding the tiller to answer, set the sail and steered north at 8 p.m., with a brisk gale at S.E. Aneroid 28·50, and rising rapidly.

Midnight, stiff breeze at S.E., with a high tumbling sea, ship going 6 knots due north. Aneroid 28·75; observed a heavy bank in the W.N.W. quarter, which is doubtless the meteor travelling onward.

Saturday, September 5.—Fresh gales and fine weather; sea going down fast; crew employed making sail and repairing damages. Wind from S.E. to E.; course steered these 24 hours, N.½E. 105 miles. Midnight, fine weather; sounded in 18 fathoms. Aneroid 29·40.

Sunday, September 6.—Wind easterly to E.S.E. at times. Noon, Taichow Island, bore N.W. about 10 miles. Glass unsteady, falling at midnight to 29·25. High cross sea getting up; wind variable at N.E., steering to the northward.

Monday, September 7.—Blowing a gale at north; bore up for an anchorage, and at 8 a.m. came to under Shang-ta; wind increasing and veering to the N.W. with heavy gusts at times. Aneroid falling at midnight to 29·06, when it was blowing a strong gale at W.N.W.

Tuesday, September 8.—By 8 a.m., the wind had veered to S.W., blowing a fresh gale; weighed and stood to the northward; passed a ship with two anchors down. Noon, Twins N.½E. Aneroid 29·06. p.m., gale increasing at W.S.W. Aneroid 29·10; anchored at 6 p.m. in 8 fathoms. Starboard Jack S.E. by S.½S. Mesan N.E. by E. Midnight, strong gale at west. Aneroid 29·27.

Wednesday, September 9.—Fresh gales from the westward, and fine weather. From this date variable winds and weather, up to the 15th, when the ship anchored at Woosung.

With reference to the above extracts, the following remarks occur to us. Some persons might say that from Wednesday noon, when appearances indicated a cyclone and the wind was northerly, that the *Water Witch*, should have been run to the southward, under a press of sail, when the wind would have veered to the N.W. and westward, enabling the vessel to round the heel of the storm, or heave to on its southern verge; but it is very easy to point this out from a desk. The difficulty at sea is very great in determining the diameter of a cyclone not yet encountered, and those who go to sea and have the responsibility of life and property, are, *perhaps*, the best judge of what ought to be done.

In the present case Capt. Baker had every confidence in the ship, and determined to face the meteor, rather than run

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the risk of being dismasted near the land, and made preparations accordingly. From noon on the 3rd till 10 p.m., the ship was heading to the eastward, and making way towards the centre of the storm, while the storm was even more rapidly approaching the ship, which circumstances account for the short time that the first part of the cyclone lasted, with the wind at north, from about 10 till midnight.

The wind coming from the opposite quarter, south, after the calm, appears to indicate that the body of the meteor was then progressing nearly west, and that the centre of the vortex passed immediately over the vessel. The ship's head having fallen off to west, was very providential, for, if she had been taken aback with such a tempest, she would most probably have foundered in a few minutes. The long continuance of the hurricane at south, from midnight till 10 a.m. is accounted for by the ship being on the port tack and heading westward, thus advancing with the storm; while the leeway she was making, partly assisted by the storm current, drifted her to the N.E. verge of the meteor about 10 a.m. of the 4th, after which time the weather moderated, the wind veering to the S.E., and the glass rising. But as the ship advanced to the northward, she overtook the storm, which had passed to the westward, and was now on the recurve, moving in a N.N.E. direction.

We observe that on the morning of the 6th, the wind had veered from S.E. to E., and that at midnight it was N.E., blowing a gale, with a falling glass, and a high cross sea on. At this time the ship had passed in front of the storm, and was now on its N.W. quadrant, having been making way to the northward. By 8 a.m., of the 7th, the wind was north, the ship being at anchor and on the western edge of the meteor, which passing onwards to the N.E., left the ship with a gale at N.W., which veered by midnight to W.N.W., the Aneroid having fallen to 29·06.

By 8 a.m. of the 8th, the wind had veered to S.W., when the anchor was weighed and sail made to the northward, when the gale was found to increase, the ship advancing faster than the storm, which was crossing her path, she was therefore again brought to a snug anchorage, and the storm passed on its way.

We see that the *Water Witch* has passed through the centre of a cyclone without material damage, and as soon as possible made sail after it, overtook it, passed round its northern and western sides, and finally anchored on its SE. side, allowing it to pass on; and we hope success may always attend the stont little ship We consider the study of the log of the *Water Witch* very interesting to navigators, and calculated to dispel any doubts which may remain in the minds of a few, as to the theory of the Law of Storms.

We would suggest to Shipbuilders and others conserned,

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that tillers are often very insecurely fitted, and much danger thereby incurred. Also that the stern ports of vessels are generally not sufficiently stout, and almost always inefficiently secured, as was very clearly seen in the case of the *Water Witch*, and has been in numerous instances.

EARTHQUAKE AT SEA.

The subjoined deposition and letter, having reference to a submarine convulsion, observed near the Azores, in November last, have been received at the Admiralty:—

"BRITISH VICE-CONSULATE, TERCEIRA,
December 21, 1857.

"Sir,—I have the honour to enclose a copy of a document obtained at my request from Mr. William Cook, master of the British schooner *Estremadura*, of Glasgow. It appears that he did not think of trying the temperature of the water, which is to be regretted, as it might have tended to prove that the effects observed were those of submarine action. No shock of earthquake was felt at this island at the time. It serves, however, to show that mariners never can be too cautious when approaching these islands, as from one day to another there is no knowing what formation may take place either above water or awash; for instance, the Island Salerina in 1811, and the danger seen by three vessels proceeding to St. Michael's in 1849, about 40 miles to the west-north-west of that island, which gave rise to Mr. Consul Hunt inducing the masters of the vessels *Æolus* and *Prospero* to go in search of it, but without success.

"I have, &c.,
"JOHN READ, H. B. M. *Consul.*"

"*To the Secretary of the Admiralty.*

DEPOSITION.

"I, the undersigned, master of the British schooner *Estremadura*, of Glasgow, while on a passage from Troon to the island of Fayal, with a cargo of coals, do hereby declare that in lat. 39° 57′N., long. 25° 50′W., at 7 p.m. of the 25th of November last, I observed abaft the beam what I considered to be a squall, but which eventually turned out to be a kind of mist or warm steam. It being my watch on deck, I asked the helmsman if he found any difference in the air, to which he replied, it was quite warm. I called the mate up, and he as well as those on deck felt the same. This lasted for half an hour; there had been no fog or mist before. The wind at the time was N.E. by compass, and continued so throughout, without any alteration in force.

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We had a following sea previous to falling in with this mist, but the sea then changed to a kind of boil, or topping sea, as if surged up from beneath, but afterwards returned to the former state when we were clear of the mist. When this phenomenon occurred the Amplimont rock, as laid down in the chart, would bear N.byE. by compass, distant 140 miles. I calculate the vessel to have been going at the time from 7 to 7½ knots, with a following sea. Sighted Terceira on the 26th, and anchored in Fayal Roads on the 27th of November.

"WILLIAM COOK.
"JOHN READ, *Consul*,"

Capt. Marshall, of the *William Kidston* which left the Gut of Canso, Nova Scotia, November 19th, and arrived at Greenock Dec. 5th, also reports as follows, Nov. 28th, 1857—Lying nearly becalmed, in lat. 52° 28′N., long. 30° 28′W. felt a very severe shock of earthquake, causing the metal capstans to make a ringing noise; the ship felt as if dragging over a bank of stones in a strong tide. The seamen on the fore part of the ship calling out "the ship is striking the bottom," I immediately threw the deep-sea lead from the poop, but no bottom. The first shock lasted about one minute, and after a lapse of 10 seconds, then followed another, lasting 15 seconds. Experienced strong breezes from S. to S.W., while crossing the Atlantic.

TRANSIT DUTIES IN CHINA.

THE *Times Correspondent* in China, in reference to our Naval operations in that country being the means of establishing commercial Relations on a different basis than heretofore, furnishes the following important observations on the Transit Levies, or Mandarin "Squeeze," in that Country.—

The object, to which those proceedings should be directed ought to be kept constantly before the public eye, and *must* engage the public attention. The stake is too valuable to be left unwatched. If it does so happen that your house is on fire, that is no reason why you should put yourself in such a fluster while you are putting it out, that you let Mr. Koff run away with your strong box, and Mr. Slick elope with your ledger. I return, therefore, and shall return, *ictibus crebris*, to my unwelcome task of hammering for attention to English interests in China.

When we have got this city of Canton, about the neck of which we are now tightening the lasso, we must use it for the purpose of preventing future wars and establishing a feeling of mutual regard between the people of the country and ourselves

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There is only one way in which this can ever be effected. We must break down the door of partition. If the brigand bureaucracy of China will remain in the way, we must walk over it. But we must have free and unrestricted intercourse. I do not propose this as an easy point to gain. It will require great tact and decision in our Plenipotentiary to obtain the privilege, and great study and foresight to hedge it about with the proper securities. You will get nothing till you show you are irresistible, and you will then get everything you show yourself resolved to have. If Lord Elgin has the perspicacity to see, and the courage to follow this bold safe course, you people at home, and especially you men of commerce at home, must support him, or he will fail. If he has not, you must push him, force him, or supersede him, for he will deserve to fail, and must fail. This is the key of the whole position. Gain it, and, in the words of a Chinese merchant, with whom I often discussed this question, "All men will be glad." He meant, and I mean, all men except the corrupt officials. The mandarins have only lately discovered that they have it in their power to tax the barbarians by levying transit imposts upon articles of barbarian necessity. Year by year this power is being cautiously brought into use, and its strain will continue to increase until the imposition becomes too grievous to be borne. I have hitherto said nothing upon these transit duties on Chinese exports, but I think I ought to record a few facts on this matter, although I dare not labour the question, as I did the far more vital matter of British manufactures.

Let us take the great staple, tea. In former times—that is to say, until within the last few years, the only tax upon tea was an impost in the shape of a land-tax; a rent of so much per mow, or rood, paid by the cultivator. In passing by Hangchau there was a transit levy of 3 cents per picul (133lb.), a mere nominal registering duty. Sometimes, if the manderin at the Ta Kwan was popular or powerful, he was able to get an extra sum of two mace a picul, something more than 1s. a cwt. for himself; but this was always thoroughly understood to be a "Mandarin squeeze-pigeon," and might have been resisted if it had been worth while.

Now, however, every picul of tea passing that same Custom-house, pays a duty of 5 taels 3 mace, or nearly 3*d.* a pound on every chest of tea—a tremendous duty when the prime value of this article is taken into consideration. The teas I now speak of, are those which come down from the Bohea-hills, but those which traverse greater distances are subject to still further exactions. Formerly the only Custom-house for their duties was at Hangchau, but now every district has its little Kwan. The finer teas which come from Ningchau, or Hoopak, or Hoonan, pay from 8½ to 9 taels per picul, before they are embarked—nearly 6*d.* per pound. The rich green tea districts, the produce of which is attracted to the great emporium of Woo-

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chang, pay a transit duty of 6 taels 8 mace, instead of the old exaction of 2 mace. Part of the recent increase of the tea trade at Foochow, is occasioned by the circumstance that the teas from that port pay 2 taels less than those which are obliged to pass by Hangchau; but this can be altered at any moment by the caprice of the local mandarin, or by a motion of the vermillion pencil. This power of taxing the barbarians has only recently been discovered. It is currently reported that it was first brought into action, to refund the sycee silver paid out at the end of the last war. It will be of no use that English Chancellors of the Exchequer reduce the tea duties at one terminus of the voyage, if Chinese Chancellors of the Exchequer can raise the duties at the other terminus. Of course, there will be no lack of Solon geese in England to make the recondite discovery, that the Chinese have a right to levy what export duties they please on their own produce. In strict Christian ethics this is as undoubtedly the fact, as that we ought to give a man our cloak if he steals our coat. But in this bad practical world those high Christian ethics are eminences which we look up to, but never climb to. Tea is an English necessity and a Chinese monopoly. If John Chinaman insists on heavily taxing John Bull's tea, sooner or later, upon one pretence or another pretence, there will be ill blood and spilt blood. The only way to prevent this is to fix the legal export duty by treaty, and *to go up to the places where the tea is grown, and buy it of the grower.* If the Yangtse were open, and if we could buy in the markets of Woochang and Hangyan, we should get our teas at a duty of 5 mace a picul, or one thirty-fifth part of the present "squeeze." Moreover, we should pay for this tea with our woollens and our shirtings. Before the Yangtse was closed by the rebels, one Chinaman at Hangyan used to take monthly 30,000 pieces of English shirtings; he now does not take one piece in a twelvemonth.

This is not all. The exactions of the mandarins extend to the means of transit. The cargo boats are pressed for "military services," and a bribe is necessary to set them free. A hundred other extortion traps beset this produce on its way to the coast. Nothing but the presence of the European purchaser upon the spot, can be of the least avail to prevent a limitless taxation of our tea. It is for you, ye teetotalers, that we are burnishing our bayonets, and fitting the fusees into our 10-inch shells.

So again of silk. Formerly there was no export duty upon silk. Now there is an export duty of $10 a bale, which they talk of raising to $12½, and there is also an additional transit duty of $7. 2 mace, or £2. 10s., upon each bale.

Now that our silk imports are thought likely to range between 100,000 and 150,000 bales per annum, this also is a

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subject not without interest to us at home. I must, however, in fairness remark, that the competition of the silk of other countries, renders it less probable that these silk exactions all fall upon the exporter.

Be it remembered, then, that since the outbreak of the rebellion in China, the Chinese mandarins have levied a tax of full 2,000,000*l.* a-year upon the people of England—that this tax consists almost entirely of local unauthorized extortion, and that it is capable of indefinite increase.

The English people should teach a starling to cry, "Free transit through China," and should hang the bird up in Lord Elgin's cabin. Nothing short of this will do; nothing short of this will prevent future wars. What more is required I do not now discuss; but this is the first, and most indispensable, of all conditions of peace. We do not know enough of the country, to take any substitute, or to submit to any modification.

Whenever we strive to obtain sufficient specific facts, whereby to map a line of action, we are brought up by the humiliating conviction that our ignorance of China, is a darkness that may be felt. Even of that great conglomerate of cities on the Yangtse we know little more than that it is the commercial emporium of Central China, and that its population is variously estimated at from five to eight millions of souls. We know that it exists, and that is nearly all we know. No one has been there except native Chinamen, and Jesuit missionaries. There are some scattered notices of it in the *Annales de la Propagation de la Foi* (tom. XVII.), and Huc has made mention of it, in his journey from Tartary to Canton. The elder missionary was roused to enthusiasm by the immensity of the numbers of prospective converts. For five leagues he saw nothing along the shores, but the closely packed habitations of men. For a still longer space the river, more than a league in breadth, was crowded with beautiful and fantastic vessels, passing and repassing, by day and by night. Nearer to shore, where these vessels became fixed habitations, he entered, at night, a water way defined on each side by floating shops; and for four hours he journeyd through a labyrinth of lighted streets, all resting on the surface of the river. In the morning he reached the shore, but only to find that, Woochang differs from other Chinese cities only in its marvelous magnitude. From a distance he saw pagodas, and yamuns, and highly cultivated environs; when he approached he saw the usual details of an aggregate of Chinese habitations, banks worn away by inundations, workshops half undermined by the stream, houses built upon piles; no order, no breadth of thoroughfares, but narrow alleys, along which men and cattle and hogs pressed in scared or jostling crowds. He records his sensations of the suffocating odours from the open manure buckets, just as I have

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experienced at Shanghai, Hoochau, Keahing, Shauhing, or Ningpo. It seemed a whole creation of mankind, all buying and selling and bartering, and chaffering, a Babel of trade, a struggling world of dealers and brokers.

This is the one great type of a thousand cities which differ only in dimensions. How can we tell from which it may be safe to be excluded, or how far a single exception may neutralize the benefit of all we gain, and enable the cunning savages to hold us in check, and keep us in the wrong?

The capacity of China is as unmeasured as its internal geography is unknown. No demand has yet been made upon it which has not been amply answered. Give us leave to go and talk to the people, and there is nothing we want which they cannot sell us. At Swatow, you will be able to buy for a dollar and a-half per picul sugar, which now costs you at the Manillas 3 dollars; at Formosa you can obtain the same important commodity at the same price, and rice and indigo in any quantity. Coals can be loaded at that island for 3 dollars a-ton, and the carrying trade is upon a scale which no one can appreciate, who has not seen the enormous fleets of junks, which now conduct it under the terrible risks of shipwreck and piracy.

The facts I have above stated respecting the transit levies have not been gathered from books or extracted from returns—the figures are now for the first time put in writing. They have been caught from the lips of those who have suffered these exactions, and paid these duties with constant but discontented habitude. I may be wrong in some matter of place or district, for the obscure jargon in which we talked made geography difficult; but a Chinaman has capital English for figures and amounts of money. About the sums of these transit duties I have no doubt, and the precise track or city wherein they are levied is of no importance. Let me add, that these men are so harassed by demands of benevolence towards the expenses of the civil war, or by blackmail levied by the rebels, that the oldest merchants are "shutting their books," as they express it. They look upon the presence and influence of the English as the only hope, which commerce has in China. Many a tale could I tell upon this subject; but it is one dangerous to handle in much detail. The Court of Pekin has sharp eyes and a long arm.

THE PORT OF REQUIJADA, SPAIN.

THE little port of Requijada, on the north coast of Spain, having recently grown into some commercial importance, and

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several masters of vessels bound to it, being put to considerable inconvenience, in consequence of their ignorance of its position, the following information respecting it, has been furnished by M. Ed. de Burgh, the French Vice-Consul at the port.

REQUIJADA is a small village in lat. 43° 18′N. and long. 3° 55′W. situate about 10 miles up the River Besaya, on its eastern bank, just above where the stream divides into two branches. At the entrance to this river is a small islet named Suances,—and further in, a village called St. Martin de la Arena, and another Suances, of which the latter is distant about 10 miles westward of the port of Santander; hence the port is frequently called Port Suances, or St. Martin de la Arena. Close behind Requijada the high road from Castille, (through Torre la Vega) passes to Santander.

The river is not sufficiently deep to permit, even at spring-tides, the entrance of vessels drawing more than 12 feet; but these, it is said, may run in during those tides with safety. If there should be a great swell on the bar, which is generally occasioned by north-westerly winds, an allowance must be made for the rise and fall of swell. In fine summer weather, vessels drawing 14 and 15 feet water have entered the river safely, but it is more prudent not to attempt to run in with a greater draught than 10 to 12 feet, or you may be neaped at waning moon tides; some vessels have been so neaped up to the full and change of moon. Vessels in ballast of 100 to 140 tons register, can enter with the greatest ease at half or three-quarter tide.

A stranger *must not* attempt to enter the river without having the assistance of a pilot. When making the port from sea, Santander Lighthouse is the object that should be run for, that being the most prominent and conspicuous land-mark. Steer then for the large rock at the entrance to the river, called Suances Islet, and in running along the coast you will see about 3 miles of yellow sand-hills, which are very conspicuous, and visible in ordinary weather at the distance of 10 or 12 miles. Having cleared Suances Islet, steering to the westward, you will see a sandy bay about 2¼ miles wide, and should then hoist your pilot-signal, if the wind be such as to allow you to enter, that is from the N.E., N.W., or North. Signals are made by means of a white flag from a green hillock, close to an old ruined tower on the starboard side of the river. This flag indicates by *dipping* the direction you ought to steer.

It is said that merchants are saved 12 shillings per ton for the land carriage of wheat or goods, by sending their vessels to Requijada instead of Santander. The difference of the distance is 48 *hours* by bullock-carts.

To the above may be added the following:—"The river

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forms a barred harbour, with a flow of tide at springs of about 12 feet and at neaps of 9 feet. It is very narrow, and can be taken only with a leading wind. The swell generally rolls in very heavily with N.W. winds, and with those winds are the best tides. With strong winds from W.N.W. northerly to East the sea rolls in much."

CUMILLAS.—This is a small creek about 13 miles westward of the River Besaya, or St. Martin de la Arena. It is sufficiently deep to accommodate vessels drawing about 9 feet water, but these will take the ground at low tide. The bottom is rocky, and there is no river.

We have to thank Messrs James Imray & Son for the above communication, which would have appeared in last Month's Number of the Magazine, had our space allowed it. *Ed. Mer. Mar. Mag.*

BURNING OF THE IRON S.S. (TRANSPORT) *SARAH SANDS.*

The *Sarah Sands* was an iron screw steam-ship, upwards of 2,000 tons burden, and was formerly employed in running from Liverpool to America. She was chartered by the East India Company for the conveyance of troops to India, and on the 16th of last August she left Portsmouth for Calcutta, under the command of Capt. J. S. Castle, with a portion of the 54th Regiment on board, comprising Lieutenant Colonel Moffatt, Capts. Brett, Thomson and Gillum; Lieutenants Galbraith, Hughes, and Crowpe; Ensign Wood; Lieutenant and Adjutant Houston, Surgeon Grant, Assistant Surgeon Donovan, Quartermaster Hipkin, Paymaster Daniel, 21 sergeants, 15 corporals, 11 drummers, 306 rank and file, 8 women, 7 children, and a number of ladies, relatives of the officers. The voyage appears to have been favourable until the 11th of November, when the ship had reached lat. 14°S., long. 56°E. (upwards of 400 miles from the Mauritius). About 3 o'clock in the afternoon of that day the troops berthed on the after orlop deck noticed a smell of burning, which apparently proceeded from beneath them in the hold. It rapidly increasing, the alarm was given to Capt. Castle, who at once ordered the after-hold to be examined, and, to the astonishment and horror of all, the cargo stowed there proved to be on fire.

It is stated that the bulk of the cargo there consisted of Government stores. Bale after bale was hauled up in the hope of getting at the seat of the fire; but in a short time the smoke became so dense as to defy any of the crew getting further into the hold. There was no confusion, however; every order was obeyed by the men with coolness and courage. The course of the ship was stopped. Colonel Moffat was seen in earnest consultation with Capt. Castle, deciding upon measures for suppressing the flames, while the crew were actively employed in taking all sail in and bringing the ship before the wind. Others ran out lengths of hose from the fire-engines, which were

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passed down to hands below, while hose was also put on the donkey-engine. It soon became apparent that all these exertions failed in checking the progress of the fire

Colonel Moffatt, at the suggestion of the commander, directed his men to cast overboard at once all their ammunition, and in a short time they succeeded in clearing out the starboard magazine. The remainder of the powder in the port magazine, however, excited great apprehensions. Already had the after part of the ship become almost unapproachable from the dense smoke and heat which filled every portion of it. The colonel appealed to his men for volunteers to attempt to rescue the contents of the magazine now so threatened. Several brave fellows instantly came forward, and heroically succeeded in reaching the magazine and clearing it, with the exception, it is supposed, of one or two barrels. It was a truly hazardous work, several nearly lost their lives; they became overpowered with the smoke and heat, and fell, and when hauled up by ropes to the deck, they were senseless. The flames soon afterwards burnt up through the deck, and running along the various cabins, speedily set the whole on fire.

There was a heavy gale blowing at the time, and Capt. Castle, perceiving the critical position of the ship, at once took measures for the safe lowering of the boats. They were launched without the least accident, the troops were mustered on deck, there was no rush to the boats, and the men obeyed the word of command with as much order as on parade. Colonel Moffatt informed them that Capt. Castle did not despair of saving the ship, but for their own preservation it had been deemed advisable to keep the boats off, so as to act in case of emergency. The ladies, women, and children, were lowered into the port life-boat, and she was directed to stand off until further orders. All hands then turned to constructing rafts of spare spars. In a short time three were put together, which would have been capable of saving a large portion of those on board. Capt. Castle succeeded in launching two overboard, and the third was left across the deck, to be lowered at a moment's notice.

In the mean while the flames had made terrible progress; the whole of the cabins, saloon, &c., were one body of fire, and about 9 o'clock the flames burst through the upper deck and ignited the mizen rigging. Through the forethought of Capt. Castle in bringing the ship to the wind, the fire and smoke were swept sternways, but serious anxiety was felt lest the ship should pay off, and so render her destruction inevitable. During this fearful suspense a dreadful explosion took place, no doubt arising from the barrels of powder left in the port magazine, which blew out the port quarter. The ship, from the main rigging to her stern, was in one general body of fire. Capt. Castle still had hope, although he expressed his fears to the commanding officer of the troops, that the ship would be lost. Providentially, the bulkhead of the after part of the ship withstood the action of the flames. Here all efforts were concentrated to keep it cool. Party after party of the troops volunteered for the work, and so endeavoured to prevent the fire making its way forward. For hours did this state of affairs continue. Although the men kept the fire at bay below, it gained the main rigging.

Mr. Welch, the chief officer, with several of the soldiers, at once went

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aloft with wet blankets, and after considerable peril and risk, succeeded in extinguishing the flames. As it was, however, some of the yards were destroyed. Towards 2 o'clock the following morning the men had the satisfaction of seeing the fire diminishing. The flames were gradually beaten back, and by daylight were entirely extinguished. It was not till then, that the fearful havoc made by the fire was clearly ascertained. The after part of the ship was burnt out—merely its shell remaining, and now another fate threatened her.

The gale still prevailed, and the ship was rolling and pitching in a heavy sea, constantly shipping water at the port quarter, which had been blown out by the explosion. She had 15 feet of water in her hold, and active steps were necessary to prevent her foundering. All the men were set to the pumps, and baling water out of the hold. Capt. Castle, fearing the stern would fall out, got two hawsers under the bottom and made them taut. The next difficulty was to stop the water, which was pouring in through the quarter. Spare sails and blankets were placed over the opening, and the leak was partially stopped. There was no abatement in the gale during the morning, and in every heave of the ship the water tanks in the hold, which had got loose, were dashing from one side to the other. The state of the ship and the continued severity of the weather, rendered the constant working of the pumps and the baling imperative. It was not till 2 o'clock in the afternoon, that the boats containing the women and children could be got alongside. They were got on board, and the other boats, which had been ordered off during the raging of the fire, returned, with the exception of the gig, which had been swamped during the night; the officer in charge of her, however, Mr. Wood, and the hands, were picked up by another boat.

During the remainder of the day, the following night, and succeeding day, the whole of the hands and troops were engaged working the pumps, and clearing the ship of water. By the evening of the 13th, they succeeded in securing the stern and getting steerage-way on the ship. She had then drifted as far as latitude 13° 12′ south. Capt. Castle then set all sail, and bore up in the hope of making Mauritius, and to the joy of all on board, made that port in eight days, where her arrival and marvellous escape excited considerable sensation. The officers in command of the troops, speak in the highest terms of the conduct of Capt. Castle during the trying occasion.

OFFICIAL REPORT RESPECTING THE LOSS OF THE SHIP *SIR CHARLES NAPIER.*

THE following Reports have been presented to the Board of Trade by Mr. Porter, the Dublin Police Magistrate, and Capt. Harris, H.E.I.C.S., respecting the loss of the ship *Sir Charles Napier*, Capt. Bissett, partly laden with iron, and bound from Liverpool for Sierra Leone, and which struck on the Kish Bank, near the Kish Light-ship.

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MAGISTRATE'S REPORT.

"DUBLIN LOCAL MARINE BOARD.

"Sir,—I have the honor to report through you, for the information of the Lords of the Board of Trade, that on the 2nd Dec., 1857, I held an investigation at Kingstown, (which was continued on the 3rd., at the Marine Board Room, Custom-house, Dublin) into the circumstances of the loss of the ship *Sir Charles Napier*, on the Kish Bank, on the 19th November.

I was assisted by Capt. Harris, H.E.I.C.S., as Nautical Assessor, from whose professional knowledge I derived very great advantage in coming to a conclusion as to the cause of the loss. I think it desirable to enclose with this Report, the evidence of the several witnesses, and to subjoin my finding.

I am lead to adopt this course from the conviction on my mind, that the conduct of the Captain, although not directly the cause of the loss of the ship, and of one of her crew, was characterised by gross subsequent misrepresentation of the casualty, and that he made a false declaration, on oath, to the Comptroller of this Port in reference to the transaction.

By thus forwarding the evidence, I enable their Lordships to review my opinion, and to exercise their own discretion on the adoption or rejection of my views. Having conferred with the Nautical Assessor, we both fully agreed that the loss of the ship arose from the influence of the iron pots and hoops upon the compass,—and that from the carelessness or ignorance in stowing the ship, without a due attention to the effect of those articles on her compass, her course was falsified.

This, in my opinion, proved a great lack of intelligence or proper care on the part of the Master: but I have to remark that in my opinion such want of skill or proper caution becomes insignificant, when compared with the deliberate and sworn misstatement of the Master, made before the Comptroller of Customs, within 48 hours after the loss of the ship, and when the most minute particulars of the transaction must be fresh in his recollection. I transmit his Certificate along with this Report, for the judgment of their Lordships, as to the propriety of allowing such a person to retain his position in the Mercantile Marine. The word "West" is admitted to have been a clerical error for "East."

"I have the honour, &c.,

"F. F. PORTER, A.M., Magistrate,

"Head-office, Dublin Police."

NAUTICAL ASSESSOR'S REPORT.

"I agree with Mr. Porter in the opinion that the ship *Sir Charles Napier* was lost from the improper stowage of the cargo, consisting principally of iron. 6,000 iron pots, equal to 10 tons in weight, and a large quantity of hoop iron in faggots, were stowed in between the decks in close contiguity to the binnacle compass. This alone is sufficient to account for the fact that the course made good from their supposed position when off the Skerries was nearly due west till the ship struck; for I find by the concurrent testimony of all the witnesses, that the proper courses were steered, provided the compasses had been correct. I have every reason to believe that the lead was duly used, as deposed to, at 1 a.m., at 4 a.m., and immediately before

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the ship struck. The conduct of the Master, in making a false statement of facts before the Comptroller of Customs, was highly reprehensible.

" H. HARRIS, Nautical Assessor."

The following letter from the Board of Trade has been addressed to Mr. Porter, the Magistrate:—

" Board of Trade.

" Sir,—I am to acknowledge the receipt of your Report, dated 8th Dec., in the inquiry held by you with Capt. Harris, H.C.S., Nautical Assessor, into the circumstances connected with the loss of the ship *Sir Charles Napier* on the Kish Bank, on the 19th Nov.

" My Lords observe that you attribute the loss of the ship to the fact of her course being falsified, owing to the quantity of iron which formed part of her cargo being injudiciously stowed in the neighbourhood of the binnacle, and consequently affecting the compass; and my lords also observe that, on account of the great want of intelligence or proper care on the part of the Master in this respect, and in consequence of the deliberate and sworn misstatement before the Comptroller of Customs, you considered it expedient to send Capt. Bissett's Certificate of Competency to this Board with a view to its being cancelled.

My Lords desire me to inform you, that to enable them to cancel or suspend the Certificate of a Master or Mate, the Merchant Shipping Act, 1854, requires that the Magistrate's Report should state that the ship was lost through his wrongful act or default. As your Report does not state that this was the case in the present instance, my Lords have no power to cancel Capt. Bissett's Certificate, and have, therefore, no alternative but to restore it to the Master, and with this view, we return to you,—Certificate of Competency, Master, No.5,760, Samuel Bissett,—and would suggest that in restoring the Certificate, Capt. Bissett should be severely reprimanded for his neglect."

The Board of Trade have caused circulars, containing the main facts elicited at the above inquiry, to be forwarded to the Local Marine Boards, Lloyd's Underwriters' Association at Liverpool, and the Compass Committee at Liverpool, with the remark—" It will be observed that the loss of the ship is attributed to the falsification of her course, owing to the injudicious stowage of a portion of her cargo, consisting of iron, in the proximity of the binnacle, by which the compass was affected. My lords consider that this should be especially under the notice of the—&c."

OFFICIAL REPORT RESPECTING THE LOSS OF THE (s.) *MARTELLO*.

The following Reports have been presented to the Board of Trade by the Justices and Nautical Assessor, appointed to inquire into the causes that led to the loss of the steamer *Martello*, Capt. A. B. Gunn, on the Carr Rocks, on a voyage from Inverness to Granton:—

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JUSTICES' REPORT.

The steamer *Martello* left Inverness for Granton with passengers and a general cargo of merchandise and live stock, on the afternoon of the 26th of November last. When on the passage from Invergordon to Cromarty, the Master found that the compass on the bridge, had deviated two points. Besides this compass, there were other two on board—viz., the steering compass at the wheel, and a tell-tale in the Master's berth, both of which he considered to be correct. Off Nairn, the Master called the carpenter to open the magnet-box on the bridge, when the magnet was found to have shifted from its position. It was then adjusted, "as near as could be."

The Master informed the Mate of the deviation in error in the bridge compass, and allowance was made for it. About 9, or half-past 9 p.m., of the 27th Nov., to the south of Peterhead, the Master returned to his berth, and knew nothing more of what occurred, until called by the First Mate a few minutes before the ship struck, viz., about 20 minutes before 4 o'clock on Saturday morning, the 28th. The Bell Rock Light was made about half-past 2 a.m., the ship being then in charge of the First Mate, the weather, although hazy on the surface of the water, being fine, and the May Light visible from the Bell Rock. On passing the Bell Rock, the course was altered.

The Mate gave the course to be steered, to the man at the wheel, S.W. by W., and went aft to the binnacle, and saw that it was acted upon; and, making allowance for the difference in the compass, found that the ship was then steered correctly, and according to orders. After passing the Bell Rock, the weather appears to have become hazy.

The speed of the ship was about 10 knots an hour, and at no time slackened, nor was it considered necessary to take soundings. The Boatswain was on the bridge along with the Mate, and there was no look-out on the forecastle. When abreast of the Bell Rock, another steamer was seen steering the same course, and about two miles astern.

The *Martello* struck inside the Carr Rocks, about 20 minutes before 4 o'clock a.m. The ship's boats (four) appear to have been got out quickly and in good order. Another steamer, which was afterwards ascertained to be the *Commodore*, was observed on the rocks, a short way off also, but no evidence has been adduced with reference to know how she got there.

In the distance run from the Bell to the Carr Rocks, the *Martello* had run about four miles out of her course. Providentially the sea was smooth and the passengers and crew landed by the ship's boats in one trip, in safety.

From the evidence adduced, the Justices are of opinion, the loss of the *Martello*, on the Carr Rocks, on the morning of Nov. 28, 1857, is to be attributed to inattention to the steering, during the hazy state of the atmosphere for a short time previously to the time when the ship struck, preventing the Lights from being seen; to the want of precaution exhibited in neglecting to use the lead, coupled with a bad look-out, which they consider, was a default on the part of the First Mate, George Sugden, who was in charge of

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the deck; and, consequently, the whole costs of the inquiry, fall, to be paid by the Owners of the said steamer *Martello*. The Justices cannot close the investigation without calling the special attention of the Board of Trade to the numerous casualties which occur on these Rocks, and the serious nature of the losses incurred, with the hope that some inquiry may be made into the allegation that more Lights are required at this part of the coast.

HENRY BURRIDGE.

NAUTICAL ASSESSOR'S REPORT.

I perfectly concur in the opinion of the Justices in this case, but I desire also to submit my opinion, that the standing orders of the ship, with respect to the lead, were not such as to insure the efficient use of it in cases of emergency. In the *Martello*, as in the *Queen* steamer, lost on the same rocks this year, and as it is stated, in the coasting steamers generally, the standing orders were, and are, to call the Master when it becomes hazy, with an understanding that the lead was not to be hove till he came on deck.

Now, supposing, as in the instance before us, the ship to be going 10 knots, if the master take but three minutes to get up, she will have run half a mile, which, in a fog, is distance enough to involve a considerable risk to a vessel running along a shore, when rocks and points jut out to seaward the distance of a mile or two. Neither the *Queen* nor the *Martello* would have been lost had the Officers of the watch, in either case, ascertained their position by the lead, after the weather became thick. The fog had come on about 55 minutes before the *Martello* struck.

I beg to suggest for the consideration of the Board of Trade, that it might be advantageous if the Officers in charge of the deck, on board these coasting steamers, were more stringently enjoined to use the lead, when thick weather comes on, on their own responsibility, without reference to the Master being on deck or below. With respect to the opinion that more Lights are required on this coast, it is well known to what confusion many Lights along a shore may lead. If a vessel had made the Bell Rock Lights, and after passing them will keep outside the stream of 16 fathoms, in accordance with the plain directions of the chart, she will go clear of the Carr Rocks, however dark or foggy the night. It may therefore be doubted whether a Light there, might not rather impede than assist the navigation.

THOMAS CAREY, *Inspecting Lieutenant*,
Nautical Assessor.

The following letter has been addressed to the Lord Provost of Kirkaldy, from the Board of Trade:—

"I am to acquaint you, for the information of the Justices, that after carefully considering the evidence and report, and the remarks of the Nautical Assessor, my Lords have determined to suspend for six months, the Certificate of George Sugden, the Mate. The Certificates of Alexander B. Gunn, Master of the *Martello*, are enclosed, that they may be restored to him: but I am to request that, in returning them, you will take the opportunity of severely admonishing him for the great want of proper care and

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caution evinced by him in leaving the vessel in charge of his Mate, without having given directions for using the lead or diminishing the speed of his vessel, when navigating a dangerous coast in thick weather.

My Lords are in communication with the Commissioners of Northern Lighthouses on the subject of Lights in the Firth of Forth, referred to in the report of the Justices and the remarks of the Nautical Assessor. My Lords have forwarded a copy of the report of the Nautical Assessor's remarks, and an extract from this to the Owners of the *Martello*, to the Committee of Lloyd's, to the Underwriter's Association of Liverpool, and to the general Steam Shipowner's Association, as well as to the various Local Marine Boards, with the view of impressing upon Masters and Mates of passenger-steamers the warnings to which this case has given rise.

NAUTICAL NOTES.

East India and China Shipping.—The East India and China Association have issued their comparative returns of entries and clearances of British and Foreign ships from and to places within the limits of the East India Company's Charter, in 1857. The result shows a decrease of 104 ships and 25,639 tons in the arrivals, and an increase of 157 ships and 129,299 tons in the departures. The falling off in the arrivals is chiefly attributable to the Indian mutiny,—Calcutta being the principal port affected. With Bombay and Madras the trade has been very active, entries and clearances both showing a large augmentation. As regards Australia, there has been a falling off of about 5 per cent. in the arrivals, but an increase of 13 per cent. in the departures.

Important to Whalers.—The Russian Government have forbidden the taking of whales within the range of their Asiatic possessions, and have sent war vessels to protect the grounds.

Overloading Ships.—The following notice has been posted in the Underwriters' Rooms, Liverpool:—"The *Thomas Sparks*, arrived at Bombay Nov. 2nd, from Liverpool, is reported to have seriously damaged a portion of her cargo. Complaints of this kind are sure to be frequent, so long as ships are allowed to carry so much dead weight in proportion to their tonnage."

Bremerhaven, the Port of entry for Bremen:—(*Important to Masters and Shippers:*)—The Port of entry for Bremen is at Bremerhaven, near the mouth of the River Weser, about fifty miles below the city. Vessels drawing more than seven feet of water cannot come up to the city, and the transportation of

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cargoes, destined for Bremen, is effected between the port of entry and the city by means of small lighters, which are not considered as common carriers by the local law, and the parties at Bremen, to whom the cargo is destined or consigned, will not receipt for the same on its delivery to the lighter, but only when delivered to them at Bremen, thus subjecting the vessel to delay, until this transportation is completed.

It is suggested by the Collector of Customs, New York, that the delays in the unlading of cargoes, so often complained of by masters of vessels from the United States, might be obviated, if the shippers to that port would insert, in their bills of lading, to "Bremerhaven," instead of "Bremen," "to be discharged within five days after entering the harbour."

The new Commercial Code of Signals:—The Board of Customs have just issued a Circular, directing their officers at the several ports of the United Kingdom to endorse upon the certificates of registry of British ships, when presented for clearance or report, and also on the certificates of all new ships at the time of registry, the four letters by which the signal flags appropriated to their official numbers are distinguished in the Commercial Code of Signals. Every vessel has an especial signal which, hoisted when passing ships of war or signal stations, will be reported to Lloyds. It behoves owners who wish to be informed of the progress of their vessels, to provide these four flags, even when they do not adopt the whole code; and so avail themselves of this useful regulation.

REWARDS AND TESTIMONIALS.

We have to record the public recognition of the services of Captain Wright, and his brave crew, on the part of the undersigned, of the Liverpool Underwriters; **Capt. Wright** has received the following handsome letter:—

"LIVERPOOL, *January* 7, 1858.

Sir,—The Liverpool Underwriters in the ship *Rowantree*, from St. John, (New Brunswick,) to this port, are wishful to mark their appreciation of your services, seamanlike conduct, and the exertions of your crew, in bringing that ship safe into this port, under very considerable difficulties; and have requested us to present you with their proportion of £100, which we beg you will distribute as follows:—Say £50 to yourself, as the Master: £15 to your First, and £15 to your Second Mate: £3 to the carpenter; and £2 to the steward and boy each, with £1 to

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each of the men. We hope the London Underwriters will contribute their proportion, and we are glad to find that Messrs. Holderness and Chilton, the agents of the ship, have already expressed their intention of presenting the seamen with £50.

We remain, Sir, faithfully yours,

FELL, TRUMAN, & Co.
WOODFALL, WILLIS, & Co.
RANSON & Co.
R. GIRVIN."

This is creditable to all parties in the transaction, and it must stimulate Masters to exertion, to find the Underwriters promptly appreciate such services.

We must not, at the same time, forget to record the fact, that when Capt. Wright paid off his officers and crew, he was presented by them with a massive and beautifully designed ring, in token of his seamanship, as a kind and humane commander, and for his indomitable courage and perseverance in saving the ship *Rowantree*. The ring is a gem in itself, and bears the following inscription :—"Presented to **Capt. Thomas Wright**, of the ship *Rowantree*, by his officers and crew, as a mark of their esteem. Liverpool, January, 1858." A more deserved tribute could not have been paid to an able and experienced seaman, and a gentleman in the most extensive sense of the word,—and which we record with the greatest satisfaction.

Capt. Henry Mayer, of the Hamburg ship *Gutenberg*, has received from the President of the United States, a Gold Chronometer and chain, valued at $300, for his successful exertions in saving the officers and crew of the ship *Howadji*, of Newbury port, which was destroyed at sea, by lightning, in November last.

Capt. Thomas F. Knowles, of the American ship *Currituck*, succeeded, during tempestuous weather, in rescuing the crew of the schooner *Flora*, of Jersey, which vessel foundered at sea, on the 30th November last, and treated them with every attention and kindness for 16 days, until they reached Marseilles, where the British Consul offered to reimburse him for expenses incurred, and for subsistence of the shipwrecked crew, which Mr. Knowles by the following letter, positively refused to receive :—

MARSEILLES, 19th *December*, 1857.

Sir,—I beg to acknowldge receipt of your valued letter, of 18th inst., and feel very grateful for its contents, However, I consider myself bound to say, that in the salvage of the crew and passenger of the *Flora*, Capt. Sullivan, I have but done my duty. I have been happy enough to meet with an occasion to render some assistance, which would have been gladly bestowed upon me by any British master, if I had stood in similar circumstances

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as the *Flora*, and find myself sufficiently repaid by the gratitude of Capt. Sullivan and crew, and by your kind letter. I consequently decline, in the most positive manner, any remuneration for little expenses I may have incurred in that instance

With many thanks, I remain, Sir, your most obedient,

THCS. F. KNOWLES.

To Her British Majesty's Consul, Marseilles.

The facts having been reported to the Board of Trade, directions have been given for a Telescope, bearing a suitable inscription to be presented to Mr. Thomas F. Knowles, in acknowledgement, on the part of Her Majesty's Government, of the friendly services so generously rendered.

Capt. A. M. Barrett, of the *Charles Brooke*, of London, has been presented with a Silver Medal and diploma, from the Emperor of the French. In February, 1855, the *Charles Brooke* was on a voyage from St. Vincent's to London, when she rescued four French seamen, belonging to a large coasting boat which had capsized off Destrait, under the lee of Guadaloupe; a fifth man of the crew having been drowned.

The medal, which is a large handsome one, with the tricolour ribbon attached, bears the profile of the Emperor, and on the reverse, an inscription of the services rendered by Capt. Barrett. The diploma, which bore the Imperial seal, also recited the services more in detail.

The President of the United States has presented a Silver Trumpet, with a complimentary letter, to **Capt. Wallace M'Lennon,** of the British ship *Star*, in acknowledgment of services rendered by him to the shipwrecked crew of the American schooner *Northern Light*.

CERTIFICATES SUSPENDED.

A Court of Inquiry under the provisions of the Merchant Shipping Act, was held on the 14th December, 1857, at the Town Hall, Kirkcaldy, before Henry Beveridge, Esq., John Niel M'Leod, Esq., and Alexander Swan, Esq., justices of the peace, assisted by Lieutenant Thomas Carey, nautical assessor, for the purpose of inquiring into the cause of the wreck of the steamer *Martello*, on the Carr Rock, on the morning of the 28th November last. The Court being of opinion that the loss of the said vessel is to be attributed to inattention to the steering, during the hazy state of the atmosphere, which prevented the Lights from being seen, and to the want of precaution exhibited in neglecting to use the lead, coupled with a bad look-out, which they consider was a default on the part of the first mate, George

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Sugden, who was in charge of the deck—the Board of Trade have been pleased to direct that his Certificate of Service for home-trade passenger-ships, No. 135,181, shall be suspended for Six Months.

CERTIFICATES CANCELLED.

A Court of Inquiry under the provisions of the Merchant Shipping Act, was held by direction of the Board of Trade at the police court, Greenwich, by James Traill, Esq., stipendiary magistrate, assisted by Captain Harris, H.C.S., nautical assessor, to investigate the circumstances attending the loss of the screw steam ship *Durham* on the 24th November last, in the bay of Audierne on the coast of France. From the evidence given, the Court attributed the loss of the ship to steering on an improper course, to the ignorance of the Master as to the exact position of the ship, and want of the necessary caution in using the lead. In consequence of the loss of the vessel having occurred through the wrongful acts and default of William Kendrew Lewthwaite —the Board of Trade have directed that his Certificate of Service, No.43,197 should be Cancelled

ROCKS AND SHOALS.

Canton River:—Bate Rock.—This rock, with only 14 feet on it at low water springs, has lately been discovered. It lies 2 cables' lengths to the northward of the north extreme of Tiger island, and the marks for it are, the fort on Tiger island, S.E. $\frac{1}{2}$ S.; the highest part of the island (eastern summit) S. $\frac{3}{4}$ E.; and the north-west extreme of the island, nearly in line with a small granite boulder, on the summit of a hill on the western shore of the river S.W. $\frac{7}{8}$ W. It is steep to, having a depth of 10 fathoms, mud, close to the eastward, and 7 fathoms between it and the island. To pass outside, or to the north-east of the rock, keep the eastern end of North Wantong island, open of Tiger island fort.*

[*All bearings are Magnetic. Variation*, 0° 20′ *East, in* 1858.]

* See Admiralty Chart, Sheet 3, of Chou-kiang or Canton river, from Tiger to Second Bar pagoda, on which this danger is inserted.

Southern Indian Ocean.—Capt. Zernichow of the *Vikingen*, reports—Feb. 27, at 12.30 P.M., upon the passage to Akyab, passed a shoal, with apparently white sand or coral, and some sea weeds, which could distinctly be seen. The circumference of the shoal seemed to be about a cable's length and a half, and as far as could be judged, from 10 to 12 feet on the shoal. The sea broke heavily on it at the time. The ship had a fine breeze,

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going 10 knots at the time, and narrowly escaped, being not more than a quarter of a cable's length off in passing; the weather clear. At 10 o'clock on the same day, also observed some coloured water, say about 22 miles to the W.byN. of the reef. Observation at noon, lat. 39° 39′S., long. 68° 32′E.

CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from December 25th, 1857, to January 25th, 1858.

Mediterranean,—Iviza.—Revolving Light on Conejera Island:—On and after the 19th of November 1857, a Light would be exhibited from a lighthouse recently erected on Cape Blanco, the north-east extremity of Conejera Island, on the *west* coast of Iviza, an Island of the Baleares group.

It is a White Revolving Light, *eclipsed once a minute*, but the eclipses are not total within a distance of 3 or 4 miles. It is visible from S.S.W. ⅔ W. round westerly to N.E. by E. ⅔ E.; and, being at an elevation of 292 English feet, should be seen from the deck of vessel in clear weather at a distance of about 20 miles.

The light tower is circular. crowned by a small turret supporting the lantern, and of a yellowish colour; it stands at 9 yards from the edge of the cliff, in lat. 38° 59′ 47″N., long. 1° 16′ 32″E. of Greenwich.

West Indies,—Cuba.—Fixed Light with Flashes on Cay Piedras:—Since the 1st of September 1857, a permanent Light has been established in a lighthouse (erected in the position formerly occupied by the lighthouse which was blown down on the 28th of August 1856,) on Cay Piedras, at the entrance of Cardenas Bay, on the north side of the Island of Cuba.

It is a Fixed White Light, varied by a Red Flash *every half minute;* it is placed at an elevation of 68 English feet above the level of the sea, and should be visible in clear weather at a distance of 15 miles.

The lighthouse stands in lat. 23° 14½′N., long. 81° 9′W. of Greenwich, nearly. Its form, height, and colour are not stated.

England,—W. Coast.—Buoys in the River Dee.—The Buoy on the S.E. elbow of the Point of Air sand has been moved about 50 fathoms in a N.N.W. direction, in which position, it

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will be more advantageous as a guide to Vessels rounding that Point, than in its former berth.

The Buoy (coloured Red,) now lies in 3½ fathoms, at low water spring tides, with the following mark and compass bearings, viz.:

Hoylake Hotel, in line with the large cave at Hilbree island..... E. by S.
Salisbury Middle Buoy ..... E. by S. ½ S.
S.W. Salisbury Buoy ..... S. by E. ½ E.
Air Buoy..... N.W. by W.

England,—E. Coast.—Buoyage of the River Tees.—Referring to the notice respecting the Buoyage of the River Tees, in *Mer. Mar. Mag.* Vol. IV. p 255, in consequence of some alterations, having since taken place in the Sands, at the entrance of the River Tees, the changes which were to have been made in the Buoys, and in the direction of the Bran Sand Lights, on or about 1st instant, have been postponed until further notice.

In the meantime the Old Channel will continue Buoyed and Lighted as heretofore.

England.—E. Coast.—Harwich Harbour.—The marks heretofore used for leading Vessels clear of the Guard End, to an anchorage off the town of Harwich, having become obscured by trees, two Spar Beacons, painted Red, with circular tops, have been erected to the northward of Landguard Fort, which Beacons, when kept in line, are to be used for the above named purpose.

England,—Scilly Islands.—Fixed White Light on Bishop Rock:—With reference to this Light, particulars of which were published in the *Mer. Mar. Mag.* Vol. V. p. 29, (last month,) the light-tower stands in lat. 49° 52′ 30″ N., long. 6° 26′ 20″ W. of Greenwich.

The Variation in that locality is 24¼° *W. in* 1857.

North Sea.—Coast of Sleswig.—Lights on Sylt Island:—On and after the 1st of January 1858, two Lights would be exhibited from lighthouses erected on the north end of the Island of Sylt, off the coast of Sleswig, when the temporary Beacon Lights hitherto shown would be discontinued, and in the course of the summer the Beacons will be removed.

The Lights are distinguished from each other by the *outer* or westernmost being of a Reddish colour, and placed at an elevation of 63 English feet above the level of the sea at high water. The *inner* Light is 72 feet above the same level, and both are visible all round the horizon in clear weather at the respective distances of 10 and 13 miles; but in approaching from the southward, along the western

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shore of Sylt Island, the *inner* Light will occasionally be intercepted by the cliffs until the Lights are nearly in line.

The lighthouses are of iron, painted White, with Red tops; the westernmost is 28 feet, and the easternmost 38 feet, in height; they are 2910 yards apart, in an E.S.E.¼S. and W.N.W.¼N. direction, and when in line lead over the Bar, in a depth of 16 English feet at low water, in accordance with the *Instructions for Lister Deep*, given in the English translation of "Zahrtmann's Danish Pilot," published by the Admiralty, pages 438—441.

All bearings are magnetic. Variation, 17¾° *W. in* 1857.

Atlantic Ocean,—United States.—Beacon Light at Sapelo Island, Georgia:—On and after the 1st of January, 1858, a Light would be exhibited from a *Beacon* recently erected in front, or to *seaward*, of the lighthouse on the *southern* extremity of Sapelo Island, entrance to Doboy Sound, Georgia, *to serve as a leading light*, or range, *for crossing the Bar in the best direction.*

The Light is placed at an elevation of 50 feet above the mean level of the sea.

The Beacon is a frame-work structure painted Black.

Directions. In running in bring the Beacon in range, or *in line* with the main lighthouse, and *keep it so* until the outer or east beacon on Wolf Island bears S.W.byW.½W., then steer N.W.byW.½W., *keeping in not less than 4 fathoms water*, to the anchorage abreast the main lighthouse.

Bearings are magnetic, Variation 4° *E. in* 1857.

Pacific Ocean.—South America.—Light at Valparaiso:—A Light has been established in a light-tower recently erected on the site of the former one on Angeles or Playa Ancha Point, the N.W. point of the entrance to Valparaiso Bay, Chile.

It is a White Light, appearing with great brilliancy *once every minute;* it is placed at an elevation of 197 English feet above the sea, and is visible in clear weather at a distance of 20 miles in every direction seaward.

The light tower is circular, of brick, 71 feet in height, and coloured White. It stands in lat. 33° 1′ 10″S., long. 71° 41′ 30″ W. of Greenwich.

Pacific Ocean,—Oregon.—Fixed Light at Entrance of Umpqua River:—On and after the 10th of October 1857, a Light would be exhibited from a lighthouse recently erected on the South Sands, at the mouth of the Umpqua River, Oregon.

It is is a Fixed White Light, placed at an elevation

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of 100 feet above the mean level of the sea, and should be seen from the deck of a vessel in clear weather at a distance of 15 miles.

The lighthouse consists of a keeper's dwelling of stone, with a tower of brick, whitewashed, rising above it, and surmounted by an iron lantern painted Red. Its height is 92 feet, and it stands in latitude 43° 40′ 20″ N., long. 124° 11′ 5″ W. of Greenwich.

Atlantic Ocean.—United States.—Fixed Light at Lloyd Harbour, Long Island Sound:—On and after the 15th of November, 1857, a *Beacon* Light would be exhibited from a lighthouse recently erected on the south-east point of Lloyd Neck, north side of Lloyd Harbour, Huntingdon Bay, Long Island Sound.

It is a Fixed Light, placed at an elevation of 40 feet above the mean level of the sea, and illuminates an arc of 350° of the horizon.

The light tower is built of brick, 34 feet high, with a keeper's dwelling, coloured White, attached. Its approximate position is in lat. 40° 54′ 48″ N., long. 73° 25′ 45″ W. of Greenwich.

Bosphorus,—Coast of Asia.—Fixed Red Lights at Leander Tower:—After the 25th of December, 1857, two Harbour Lights would be exhibited from Leander tower, on the western or outer edge of Leander Bank, Skutari.

They are Fixed Red Lights, vertical, and placed at an elevation of 36 feet above the water; they should be visible in clear weather at a distance of 4 miles. *Var.* 7°*W. in* 1857.

Sea of Marmora,—Constantinople.—Alteration of Light at Seraglio Point:—After the 25th of December 1857, a Light, described as follows, would be *substituted* for the Fixed Light hitherto shown at Seraglio Point, at the entrance of the Bosphorus or Channel of Constantinople,

The new Light is a Fixed Light, varied *once a minute* by *green flashes*, preceded and followed by a short eclipse, and visible at the distance of 15 miles from N.$\frac{3}{4}$E., round easterly to W.S.W.

The light tower is 147 English feet in height, and stands at 547 yards to the *eastward* of the old one.

All bearings are Magnetic. Variation 7° *W. in* 1857.

England.—E. Coast.—Berwick Light.—Vessels coming from the north, at night, should take great care to catch the Berwick Pier Light, and not to mistake the Railway Station Lights for it; care should also be taken not to come so close in as to shut in the Berwick Light with the land.

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NEW BOOK.

MEMOIRS OF THE LIFE AND SERVICES OF REAR-ADMIRAL SIR WILLIAM SYMONDS, K.C.B. *Surveyor of the Navy from* 1832 *to* 1847. Edited by JAMES A. SHARP. Longman & Co.

[Will be noticed next month.]

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, in January*, 1858. *Sold by J. D. Potter*, 31 *Poultry. and* 11 *King Street, Tower Hill, London; and the principal Chartsellers in the Kingdom.

		s.	*d.*
W. Coast of Scotland.	Port Patrick. E. K. Calver, R.N and W. Lorie, Esqrs. 1857...	1	6
W. Coast of Ireland.	Sheet 7. Teelin Head to Downpatrick Head. Capts. G. A. Bedford, and R. Beechey, R.N. 1854... ...	2	0
Nova Scotia.	Liscomb Island to Green Island. Capt. Bayfield, R.N. 1856.	3	0
Do.	Green Island to Cape Canso. Capt. Bayfield, R.N. 1855...	3	0
Bay of Fundy.	Grand Manan Island and adjacent dangers. Commander Shortland, R.N. 1855.	3	0
South America.	Bahia de Todos os Santos. Various Authorities... ...	2	6
Do.	Lighthouse Book. Corrected to February, 1858. By Commander Dunsterville, R.N.	0	6
African Lighthouse Book.	Corrected to February, 1858. By Commander Dunsterville, R.N....	0	3
China Coast.	Canton River. Sheet 5. Corrected to 1857...	3	0
Do.	do Sheet 3. do	3	0
Philippine Islands, &c.	Eastern part of the Celebes Sea. Spanish and Dutch Charts. Corrected partially by Capt. Sir E. Belcher, R.N. C.B.	3	0
Do.	St. Barnardo Strait and parts adjacent,—from Spanish Charts	3	0
Do.	Eastern part of the Sulu or Mindora Sea. Spanish Charts and Sir E. Belcher, R.N. & C.B.	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All communications to be addressed* "EDITOR OF THE MERCANTILE MARINE MAGAZINE, *care of Mr. W. Foster*, 114, *Fenchurch Street, London.*" *N.B.— The real Name and Address of Correspondents must be given—not necessarily for publication but as a guarantee of good faith.

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THE

MERCANTILE MARINE MAGAZINE.

MARCH 1858.

THE MERCHANT SERVICE.

At a time when the Mercantile Marine are bestirring themselves to procure an Amendment of the Merchant Seaman's Act, 1854, we desire to call their attention to a book, entitled "Facts for Factories, being Letters on Practical Subjects suggested by experiences in Bombay," by W. Walker, in which many important points relating to a sea-faring life are touched on, and from which we select the following pertinent remarks:—

"Not only has the *conduct* of the seamen deteriorated," says Mr. Walker, "but they are deficient in seamanship as compared with sailors of ten or fifteen years ago, and to an extent which is quite startling to old salts. I do not exaggerate in putting forward these opinions. I feel confident that the truth can be vouched for by many foremast hands themselves, and certainly by all commanders of ships now serving, as well as those who have retired from a maritime life."

In regard to the abolition of apprentices "it is but just to observe, that many ship-owners were far-sighted enough not to avail themselves of this privilege, as they probably well knew that unless they trained sea*lads*, they would fall off in the number of sea*men* to man their ships. This has now come to pass; and the captains of ships are loud in their complaints as to the want of seamanship in men who now unblushingly enter ships as able seamen, and when they get to sea, the captain finds they are unable to take the helm, or a cast of the lead."

The apprentice system, left to the discretion of the ship-owners, has *officered* our ships; or, as Mr. Walker expresses it, "has found a captain for every one of the splendid fleet of merchant-ships (100 sail) now in our harbour." (Bombay.)

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And what are the qualifications demanded in these captains, requiring the developement of apprenticeship? "A captain is required to be well versed in navigation in all its branches, from plane trigonometry to great circle sailing, and from finding the latitude by a meridian altitude to the longitude by a lunar observation. He must be able to conduct his ship to all parts of the world, and to keep her clear of lee-shores, rocks, shoals, and sand-banks. Many captains are even kept on shore, by owners, to see a new ship built, from keel to top-rail. By this experience, thus gained, he becomes an adept in applying a remedy when a defect appears. He must be perfectly acquainted with various trades, such as sail-maker, carpenter, cooper, blacksmith, and sometimes cook. As a doctor, he has to prescribe medicines for his crew, and if, like his prototype on shore, he kills his patient, as a clergyman he has to read the funeral-service over his remains. He must be thoroughly conversant with the maritime laws of all nations. Many of them are invested with the full duties of the merchant, in which capacity he has to exhibit the care and cunning of a lawyer in drawing charter-parties, bills of lading, &c. He is supposed to be a kind and humane man, slow to anger, and of great command of temper; he must on no account allow himself to be so irritated as to lift his hand (be the provocation ever so great) against one of his crew. So sure as he does, *the poor ill-treated* (and *insolent*) sailor gets public sympathy, and a *reward* for his conduct; while the *brutal* captain gets either a heavy fine or imprisonment, or both, and public censure, for his conduct, without any consideration as to the heavy responsibility, anxiety, and frequent difficulty of governing unruly crews.

On the other hand, the modern merchant-sailor, too generally, ships in a vessel for a foreign port, and as soon as cables are unbent and anchors stowed, he is ready for his game of insolent insubordination, with a view to his discharge and re-entry into some other service that may captivate his vagrant fancy.

"When a seaman enters this port, and learns that, whilst he is working for £2 10*s*. a month, the wages given out of Bombay is £4, he braces up his mind for a row, refusal to do duty, and their consequent penalties—the shadiest wall-lounge of the House of Correction, where he can smoke the calumet of peace, without its moral binding conditions."

THE MYTH OF THE SEA SERPENT.

"The Sea Serpent again," in conspicuous type, as a letter to the Editor, or as an extract from a log-book, is an announcement which at different intervals of time goes round the public journals, and if we may believe the reports, it is quite certain we shall

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never be able "to fix the localities of its resort," as in the case of the whale—for it seems to have a wide geographical range, at one time disporting its huge carcass in the Gulf Stream, at another, "steaming along" through the South Atlantic, and may even be heard of in the Pacific,—mostly, however, as if it were on the chase after something, or as if bent on putting "a girdle round about the earth in forty minutes." It would also appear to possess another peculiarity, like Proteus, the marine deity of the ancient mythology, whose distinguishing characteristic, was the faculty of assuming different shapes. These are the conclusions at which we arrive from comparing the different accounts; and as during the past month some correspondence on the subject has appeared in the pages of *The Times*, we wish to make a few remarks, that may, perhaps, ultimately tend to dispel a myth.

We know that illusory appearances often present themselves at sea, and to these must be attributed the reports of some rocks and shoals, which, when *sought for* have never been found.

Two instances of such illusions occur to us immediately,—but these were as speedily dissipated. They are related in Capt. J. Weddell's "Voyage to the South Pole in 1822-24."—He says, "in the evening whilst enveloped in fog, the second mate called to me in the cabin, that breakers were close under our lee. I immediately prepared to ply to windward, but not seeing the broken water again, I concluded that what the officer saw was the breathing of whales; which must indeed have been the case, as when the fog cleared away nothing like breakers was visible." Again, a few days afterwards he says, "at 11 o'clock at night we passed within two ship's lengths of an object, which had the appearance of a rock. The lead was immediately thrown out, but finding no bottom, we continued lying-to, till the chief mate ascertained it to be a dead whale very much swollen: such objects seen imperfectly in the night, are often alarming."

A ship bottom-up in seas where rocks and shoals are known to exist, if seen from a distance, might easily be taken for a "danger," and it is always worth while to determine the truth in such matters.

But such illusions are different from that of the sea serpent. We do not think that the myth-believing tendency is much stronger among seamen than among landsmen, and when put on the right scent, we have no doubt they will be perfectly willing to aid in resolving the mystery, and which in fact Capt. Smith's letters (pp. 70 and 73) give a clue to. "Having caught the "monster" and brought it along side the ship and hoisted it on board—" it appeared somewhat supple when hanging, but so completely covered with snaky-looking barnacles, that we had it some time on board before it was discovered to be a piece of gigantic seaweed, 20 feet long and 4 inches diameter, the root

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end of which appeared, when in the water, like the head of the animal, and *the motion given by the sea caused it to seem alive.* It dried up to a hollow tube, and as it had a rather offensive smell, was thrown overboard. In the water, before being divested of its extraordinary-looking living appendages, the diameter of my marine capture was above 3 feet. Some buckets full of splendidly-coloured blue and crimson crabs, varying from the size of a shilling to that of a man's hand, were collected from it, and that this quantity of such animal life could be furnished with a refuge in the mats of snaky-looking creatures which constituted the moving monstrous looking external will assist those who read my account in believing what I before stated, that even when the object was laid on deck we had difficulty in making out what it was."

Now among seaweeds there are some extraordinary sorts, especially remarkable for their dimensions. On the N.W. coast of North America, the tangle named *Nereocystis* flourishes, having a stem as thin as whipcord, measuring 300 feet in length, but "bearing at its summit a huge air-vessel, six or seven feet long, shaped like a great cask, and ending in a tuft of upwards of fifty forked leaves, each of which is from thirty to forty feet in length." (Compare this with Capt. Harrington's report, p. 69.)

This is surpassed by the *Macrocystis*, a seaweed remarkable for its extensive geographical range, and attaining the astonishing length of from 700 to 1200 feet. A *Lessonia* grows to the height of 30 or 40 feet, with a tall and straight trunk of considerable thickness, throwing out numerous branches, and covered with lancet-shaped leaves. One species of this latter is abundant at the Cape of Good Hope. In fact, many of these graceful plants emulate the palm in form and in the appearance of the fronds, and the arborescent ferns and bamboos in slightness and loftiness. These submarine forests are tenanted by innumerable living creatures.

Or taking another view of the case,—a recent voyager describes a large pine, which drifted some distance by the side of his vessel: barnacles adhered in great numbers to the trunk, while teredos had bored it through and through; and among the branches and trailing fuci, was to be seen marine life in great varieties,—shrimp-like creatures, crabs and small fish, and it might with truth be called a floating island.

Now let us imagine a spar or a ship's mast covered with seaweed, &c. or a tree, as above described, to have arrived at the state when one end becomes more buoyant than another, tossed by the tumbling waves, and carried by the current in a different direction to a ship under sail; or again, one of the monster branches of seaweed with an end like a "nun buoy," and the fronds for "a mane;" and any of these might, from the distance of 200 yards or even less, become the sea-serpent.

The idea of saurians, similar to those of the geologic ages,

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is out of the question, not being probable: but when our readers have perused the correspondence which follows, (the most recent on the subject,) and compared the statements with what we have suggested, they may possibly fall into our views, and when they get a peep at the sea serpent again, may make an effort to establish his identity.

Sir,—I beg to enclose you a copy of an extract from the meteorological journal kept by me on board the ship *Castilian*, on a voyage from Bombay to Liverpool. I have sent the original to the Board of Trade, for whom the observations have been made during my last voyage. I am glad to confirm a statement made by the commander of Her Majesty's ship *Dædalus*, some years ago as to the existence of such an animal as that described by him.

I remain, Sir, your obedient servant,

G. H. HARRINGTON.

14, South Castle Street, Liverpool, *Feb.* 2.

Copy of an Extract from the Board of Trade Meteorological Journal, kept by Capt. Harrington, of the ship *Castilian*, from Bombay for Liverpool.

Ship *Castilian*, Dec. 12, 1857, N.E. end of St. Helena, bearing N.W. distance 10 miles.

At 6.30 p.m., strong breezes and cloudy, ship sailing about 12 miles per hour. While myself and officers were standing on the lee side of the poop, looking towards the island, we were startled by the sight of a huge marine animal, which reared its head out of the water within 20 yards of the ship, when it suddenly disappeared for about half a minute, and then made its appearance in the same manner again, showing us distinctly its neck and head about 10 or 12 feet out of the water.

Its head was shaped like a long nun buoy, and I suppose the diameter to have been 7 or 8 feet in the largest part, with a kind of scroll, or tuft of loose skin, encircling it about 2 feet from the top; the water was discoloured for several hundred feet from its head, so much so that on its first appearance, my impression was that the ship was in broken water, produced, as I supposed, by some volcanic agency since the last time I passed the island, but the second appearance completely dispelled those fears, and assured us that it was a monster of extraordinary length, which appeared to be moving slowly towards the land.

The ship was going too fast to enable us to reach the mast-head in time to form a correct estimate of its extreme length, but from what we saw from the deck, we conclude that it must have been over 200 feet long. The boatswain and several of the crew who observed it from the topgallant forecastle, state that it was more than double the length of the ship, in which case it must have been 500 feet; be that as it may, I am convinced that

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it belonged to the serpent tribe; it was of a dark colour about the head, and was covered with several white spots.

Having a press of canvass on the ship at the time, I was unable to round to, without risk, and therefore was precluded from getting another sight of this leviathan of the deep.

GEORGE HENRY HARRINGTON, Commander.
WILLIAM DAVIES, Chief Officer.
EDWARD WHEELER, Second Officer.

Sir,—In your paper of the 5th inst. is a letter from Capt. Harrington, of the ship *Castilian*, stating his belief that he had seen the great sea serpent, near St. Helena. His confidence is strengthened from the fact of something similar having been seen by Her Majesty's ship *Dædalus*, near the same position.

The following circumstance, which occurred on board the ship *Pekin*, then belonging to Messrs. T. and W. Smith, on her passage from Moulmein, may be of some service respecting this "queer fish." On December 28th, 1848, being then in lat. 26°S. long. 6°E. nearly calm, ship having only steerage way, saw, about half-a-mile on port beam, a very extraordinary-looking thing in the water of considerable length.

With the telescope we could plainly discern a huge head and neck, covered with a long shaggy-looking kind of mane, which it kept lifting at intervals out of the water. This was seen by all hands, and declared to be the great sea serpent. I determined on knowing something about it, and accordingly lowered a boat, in which my chief officer and four men went, taking with them a long small line, in case it should be required. I watched them very anxiously, and the monster seemed not to regard their approach. At length they got close to the head. They seemed to hesitate, and then busy themselves with the line,—the monster all the time ducking its head, and showing its great length. Presently the boat began pulling towards the ship, the monster following slowly.

In about half-an-hour they got alongside; a tackle was got on the main-yard, and it was hoisted on board. It appeared somewhat supple when hanging, but so completely covered with snaky-looking barnacles, about 18 inches long, that we had it some time on board before it was discovered to be a piece of gigantic seaweed, 20 feet long and 4 inches diameter,—the root end of which appeared, when in the water, like the head of the animal, and the motion given by the sea caused it to seem alive. In a few days it dried up to a hollow tube, and, as it had a rather offensive smell, was thrown overboard.

I had only been a short time in England, when the *Dædalus* arrived and reported having seen the great sea serpent,—to the best of my recollection near the same locality, and which I have no doubt was a piece of the same weed. So like a huge living monster did this appear, that had circumstances prevented my send-

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ing a boat to it, I should certainly have believed I had seen the great sea snake. I am, Sir, your obedient servant,

FREDERICK SMITH.

Newcastle-on-Tyne, *Feb.* 10.

Sir,—Observing in your paper of yesterday's date, a letter from a correspondent, relative to the marine animal commonly called the "sea serpent," in the concluding paragraph of which he mentions, that he has no doubt the object seen from Her Majesty's ship *Dædalus*, in the month of August, 1848, when on the passage from the Cape of Good Hope to St. Helena, was a piece of the same seaweed observed by himself, I beg to state, that the object seen from Her Majesty's ship, on that occasion, was, beyond all question, a living animal, moving rapidly through the water against a cross sea, and within five points of a fresh breeze, with such velocity that the water was surging under its chest as it passed along at a rate, probably, of not less than 10 miles per hour.

Capt. M'Quhae's first impulse was to tack in pursuit, ourselves being on a wind on the larboard tack, when he reflected that we neither could lay up for it, nor overhaul it in speed. There was nothing to be done, therefore, but to observe it as accurately as we could with our glasses, as it came up under our lee quarter and passed away to windward,—at its nearest position being not more than 200 yards from us; the eye, the mouth, the nostril, the colour, and form, all being most distinctly visible to us.

We all felt greatly astonished at what we saw, though there were sailors among us of 30 and 40 year's standing, who had traversed most seas, and seen many marvels in their day. The captain was the first to exclaim "This must be that animal called the sea serpent," a conclusion which, after sundry guesses, we all at last settled down to. My impression was, that it was rather of a lizard than serpentine character, as its movement was steady and uniform, as if propelled by fins, not by any undulatory power.

It was in sight, from our first observing it, about 10 minutes, as we were fast leaving one another on opposite tacks, with a freshening breeze and the sea getting up.

I feel, Sir, I have already occupied more of your time and space than is justifiable, and have the honour to remain your obedient servant,

AN OFFICER OF H.M. SHIP DÆDALUS.

Feb. 13.

Sir,—A letter appears in *The Times* of to-day, signed, "Frederick Smith," on the subject of the sea serpent.

The writer has this advantage over others who have re-

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ported the occasional appearance of what he fairly calls "this queer fish,"—that he has handled as well as seen it. Still there would seem to be a considerable variety in the genus, for, while the specimen obtained by the *Pekin* in 1848, was 4 inches in diameter and 20 feet in length, that seen from the *Castilian* is described, if I remember rightly, in your paper of the 4th inst. as 10 feet or 11 feet in diameter, and upwards of 200 feet in length.

In this latter instance it was seeing only, and but a passing sight; and testimony of this kind is just that which naturalists may be slow to receive as evidence of any new fact; nevertheless the practised vision of the *Castilian's* commander should go for something, and, as it would appear from the following letter, that Capt. Harrington is to be in town next week, and ready to answer any questions, it might be worth the while of some of our philosophers to examine a little into the question of what Capt. Harrington and his officers really did see.

I have the honour to be, Sir, your obedient servant,

W. A. B. HAMILTON.

Blackheath, *Feb.* 12.

14, South Castle-street, Liverpool, Feb. 8.

Dear Sir,—I am in receipt of your favour of the 6th of February, and should be glad if my communication to *The Times* might be instrumental in dispelling many doubts respecting the existence of such a monster as that described by myself and officers.

I communicated it to Capt. Schomberg, R N., of this place, in the course of conversation, who advised me by all means, to send a copy of it to *The Times*.

Notwithstanding the assertions of men of science to the contrary, I am now sure that such animals exist. I could no more be deceived than (as a seaman) I could mistake a porpoise for a whale. If it had been at a great distance it would have been different; but it was not above 20 yards from the ship.

I am of opinion that this animal makes its appearance at the surface, at long intervals only. I am informed by Messrs. Lamport & Holt, shipowners of this place, that one of their captains reported a similar thing about two years ago, off the island of St. Helena; but they took no further notice of it, supposing, as your friends seem to do, that he might have been deceived.

Twenty people, including Mrs. Harrington and my two Officers, saw it as distinctly as I now see the gas light by which I am writing. I am well known in London, having commanded a steam transport, during the Russian War, belonging to the North of Europe Steam Navigation Company.

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Capt. Claxton, R.N., of the Priory, Battersea, is a personal friend of mine. I am also well known to Sir Colin Campbell, who is uow in the East. My present ship is 1,064 tons new measurement, and a new ship, of which I own a good part myself. There are therefore many reasons (in addition to my holding a first-class certificate in the Mercantile Marine) to hinder me from propagating a report which can do me no good, and, if untrue, do injury to science, in the room of assisting it to elicit the truth, in so important a matter as the discovery of the inhabitants of the deep.

I shall be in town for three or four days in the early part of next week. A letter addressed to me at the Jerusalem Coffee House will meet with attention, and, if my limited time permit, I should be glad to have an interview with yourself, or any of your friends who might wish to have a verbal explanation in this matter.

I have the honour to remain, Sir,
Your obedient servant,
G. H. HARRINGTON.

To Rear Admiral W. A. B. Hamilton.

Sir,—I beg to explain, in answer to Rear-Admiral Hamilton, that in the water, before being divested of its extraordinary-looking living appendages, the diameter of my marine capture was above three feet. Some buckets full of splendidly-coloured blue and crimson crabs, varying from the size of a shilling to that of a man's hand, were collected from it, and that this quantity of such animal life could be furnished with a refuge in the mats of snaky-looking creatures, which constituted the moving monstrous-looking external, will assist those who read my account, in believing what I before stated, that even when the object was laid on deck, we had difficulty in making what it was.

Now, seaweeds of gigantic growth abound near the islands of the group of Tristan d'Acunha. From decay or other causes, these will from time to time become detached at the roots, and with their living attachments, will then, floating horizontally, be carried by the well-known currents into the very positions where the sea serpent delights in exhibiting himself. It is not disputed that such was the monster picked up by the boat's crew of my ship. I do not doubt that more monstrous specimens may be seen from time to time, and I expect that your insertion of this correspondence, will cause more attention to be given to their capture, than, as on board of Her Majesty's ship *Dædalus*, to the forming of sundry "guesses," causing the observers to "settle down" to the conclusion, "This must be the animal called the sea serpent." Had the monster I described not been taken, I should have believed, as firmly as Capt. Harrington does,

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that I could confirm the statement of the commander of the *Dædalus*, and that "the animal belonged to the serpent tribe."

Everybody knows what different notions are generated by momentary and unexpected appearances of things, as compared with the things themselves when examined. Perhaps the nostril of the *Dædalus* sea serpent was seen in the recollection of one spectator, the mouth in that of another, the eye in that of another, and so on. I take leave to question the possibility of these "being most distinctly visible," when the object at its "nearest position" was 200 yards distant, the sea getting up, and the observers travelling in an opposite direction, the passing of the two being apparently at the rate of 20 miles an hour. Naturalists will say whether an animal, to answer to the habits and attributes of that in question, would have a nostril.

I am sure that Capt. Harrington, of the *Castilian*, saw an extraordinary object, and described it according to his impression, and having a great respect for "a first-class certificate in the mercantile marine" (as I hold a "first-class extra" myself,) and also for "Sir Colin Campbell, now in the East," to whom Capt. Harrington is so well known. I feel equally sure that, so accredited, he has published his account with no other than a good object. Nevertheless, these circumstances do not prove to me that Capt. Harrington saw the sea serpent, because that "queer fish" so very nearly and completely took me in, until I took him in.

I am, Sir, your most obedient servant,

FRED. SMITH.

Newcastle-upon-Tyne, *Feb.* 19.

THE KOORIA MOORIA ISLANDS.

AT a meeting of Masters of 29 vessels, held at the Kooria Mooria Islands, on the 14th of January, 1858, resolutions were passed to the following effect:—

That the three islands, Haski, Jibleea, and Ghurzood, are not covered with guano, as stated by the lessees.

That the quality is not anything like Ichaboe and Upper Peru.

That the facilities for loading are not equal to those at Ichaboe.

That the sea is often very rough, and several ships have lost anchors.

That there are no safe harbours for ships on the island of Jibleea, boats even not being always safe.

That abundance of labour cannot be obtained from Aden, the Indian Government having refused labourers permission to leave Aden for the Kooria Mooria Islands.

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That the statement of the dryness of the climate is false, rain having frequently fallen during the working months, to the detriment of all.

That no man has been able to dig and load half a ton a day.

That in no case can guano be shot from the high ground above into the vessel's hold alongside.

That no ship can lay with safety within half-a-mile of Jibleea.

That the meeting considers that the lessees should forfeit the amount of license, and that no masters of ships at the Kooria Mooria Islands should sign bills of lading, (except under protest,) for any guano got there.

The meeting concluded by adopting a resolution, condemnatory of the parties who circulated false reports respecting the value and quantity of the guano, and regretting that Capt. Freemantle's report, showing the true state of the case, had not been published earlier, and so prevented people from entering into the adventure.

[These resolutions coincide with the views of Mr. S. B. Haines, who visited the Kooria Mooria Islands in 1835-6, and his description of them will be found in the *Mer. Mar. Mag.* Vol. IV. p. 207-212.]

VARIATION OF THE COMPASS IN THE NORTH AND BALTIC SEAS, 1858.

The following information respecting the Variation of the Compass in the North and Baltic Seas—in continuation of that relating to the British Isles, published by order of the Lords Commissioners of the Admiralty in August 1857,—is made public in order to apprize mariners of the *decrease* in the Variation, which in the North Sea at present averages 7 minutes annually, and in the Baltic Sea about 5 minutes; as also to enable mariners and agents for the sale of charts, to correct the numerous sailing directions and charts now in use, in which the Variation is erroneously noted.

From the Eastern Coast of the British Isles to the Kattegat the present general direction of the lines of equal variation is N. by E. and S. by W. (true), ranging in amount from 25° to 16°; —and from the Kattegat to the Gulf of Finland, the lines of equal variation are nearly North and South (true), ranging from 16° to 5° westerly.

EASTERN COAST OF BRITISH ISLES.

At Lerwick and Sumburgh Head	25°W.
Pentland and Moray Firths	25¾ -
Buchanness and Fifeness	24¾ -

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Holy and Farn Islands	24°	W.
Shields, Sunderland, and Hartlepool	23½	-
Flamborough Head	22¾	-
The Wash and Dudgeon	22	-
Leman and Ower, Yarmouth and Orfordness	21¼	-
River Thames	21½	-

COASTS OF BELGIUM, NETHERLANDS, HANOVER, and WESTERN SHORES OF DENMARK.

At Ostende	20°	W.
River Schelde entrances and Texel	19½	-
Ems River and Hantsholmen Light	18½	-
Helgoland Island	18	-
Elbe River entrances, Cuxhaven and Tonning	17½	-

S.W. AND SOUTH COASTS OF NORWAY, AND THE SKAGERRAK.

At Fens Fiord, to Bucke Fiord	21½ to 20½°	W.
Eggersund	20	-
Naze of Norway	19¼	-
Christiansand	18½	-
Christiania, Bohus Bay or the Sleeve and Skaw Light	17	-

KATTEGAT, LITTLE AND GREAT BELTS AND THE SOUND.

At Læso Island	16½°	W.
Gottenburg and Anholt Island	16	-
Little Belt and Kiel	16¾	-
Great Belt and Lubeck	16¼	-
Copenhagen and the Sound	15¼	-
Bornholm Island	14	-

COASTS OF SWEDEN.

At Carlskrona	13¾°	W.
Öland Island and Nyköping	13	-
Landsort Light and Stockholm	12½	-
Soderarm and Understen Lights	11½	-
Gothland, South point	12	-
Farö and Gottska Sando	11½	-

COASTS OF PRUSSIA.

At Rugen Island	14¾°	W.
Stettin	14¼	-
Jershoft Light	13	-
Danzig	12	-
Königsberg	11	-
Memel	10½	-

COASTS OF COURLAND AND LIVONIA.

At Entrance to Gulf of Riga	9½°	W.
Riga	8½	-
West Coast of Osel and Dago Islands.	9¾	-

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GULF OF FINLAND.

At Hango Head and Odensholm Light ..	8¾°	W.
Helsingfors and Revel	7½	-
Hogland Island.....	6¾	-
Kronstat.....	5½	-
St. Petersbugh	4¾	-

GULF OF BOTHNIA.

At Åland Islands.....	11°	W.
Söderhamn	13	-
Umea	11	-
Biurö Head.....	10	-
Tornea and Brahestad	8	-
Gadd, and Norr Skär Lights	10½	-
Wasa, Biörneborg, and Nystad.....	10	-

OFFICIAL REPORT RESPECTING THE LOSS OF THE SCREW STEAMER *DURHAM.*

THE following Report was made to the Board of Trade, relative to the inquiry held by Mr. Traill (magistrate), respecting the loss of the S. S. *Durham*, Capt. Lewthwaite, in Audierne Bay, near Brest, on a voyage from the Coast of Africa to London :

GREENWICH POLICE COURT, Jan. 12, 1858.

My Lords,—With the assistance of Capt. Harris, as Nautical Assessor, I have, in pursuance of your Lordships' directions, made inquiry regarding the loss of the screw steam-vessel *Durham*, and have the honour to present the following Report for your Lordships' information.

The evidence taken by us in this case is confined to the statements of the Master, Mate, and Third Engineer, who were the only persons appearing before us of those on board at the time of the wreck, and their statements, notwithstanding the loss of the ship's log, and other papers, will be found sufficient to warrant the conclusion drawn from them.

The *Durham* was an iron screw steam-vessel, of the burthen of 428 tons, owned by the General Iron Screw Steam Collier Company, of London, and commanded by Capt. William Lewthwaite, with a crew consisting in all of 18 men. The Captain had a certificate of service, which was lost with the vessel. He had commanded the vessel for six months, has been in the service of the company as Master, for nearly 12 months, and made voyages previously to the Mediterranean and other places outside the British Channel, though never before in command of a steamer.

The *Durham* was, at the time of the loss, on her return voyage from the Coast of Africa, bound for London, with a valuable cargo, consisting of 400 tons of palm oil, 20 pieces of ivory, and a few bags of moss and cochineal dust. She left Teneriffe for London, 14th of November last, and was

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wrecked about 3 o'clock, a.m. on the 24th of the same month, in Audierne Bay, on the Coast of France, about 30 miles to the southward of Brest.

In order to account for the loss of the ship, and as to the Master's conduct in relation to it, two questions will have to be considered—first, the correctness of the course laid down for the ship, from the time she was abreast of Cape Finisterre; and, secondly, the means which might, if taken in due time, have averted the loss.

First, with regard to the ship's course from Cape Finisterre, it appears that at 2 p.m. on the 21st of November last, the ship's bearings were Cape Finisterre N.N.E.½E. and at 8 the same evening the light on Cape Finisterre bore S.S.E. about 20 miles distant. From that time the courses steered were as follows:—N.E. by E. till 8 the following morning, when the course was altered for about 3 hours, till noon on the 22nd, to N.E. At noon, on the 22nd an observation for latitude was had, but none for longitude,—the chronometer, as the Master alleges, having been broken or out of order. What the latitude was, by observation, the Master cannot state, though it was entered in the log, but he says he found it nearly to correspond with his reckoning by account, and he seems to have been satisfied that his longitude by account was correct.

At this time the ship's course was again brought back to N.E. by E. and so continued till noon of the 23rd, when, the Mate having worked up the ship's reckoning, and found her too far to the eastward, took upon himself to haul her up to N.E. The reason he gives for taking upon himself thus to alter the course was, that the Master was below from noon till 4 p.m. and (as he believed) asleep, though it appears by the evidence of the Third Engineer that the Master was in the engine-room during part of that time, and certainly the worse for liquor.

This latter fact, and also an occasional instance or two of the same kind during the voyage, is spoken of by the Mate; but as the loss was not attributable to anything of this kind in the Master's state, no further observation is necessary. The Master, when he came on deck at 4 p.m. of the 23rd, observed that the ship's course had been altered, and was told it had been done by the Mate, and the course (N.E.) was continued till the ship struck.

Thus, from the afternoon of the 21st till 3 a.m. of the 24th, a period of about 60 hours, during which the vessel must have run about 350 miles, it appears that her course was N.E. by E. for at least two-thirds of the time and of the distance run. Now, the course by compass across the Bay of Biscay, from 10 miles abreast of Cape Finisterre to 10 miles west of Ushant, is N.E.½E.; so that, according to the evidence, the course was for about two-thirds of the time, and of the distance run, considerably to the eastward, and inside of the true and prudent course to be kept.

Further, it is to be observed that, in making the run from Cape Finisterre to Ushant, in thick weather, with no observation for longitude, with a S.W. wind and a heavy swell, as was the case with the *Durham*, a much more liberal allowance ought to have been made for leeway. Under these circumstances it seems impossible not to come to the conclusion that

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Capt. Lewthwaite was guilty of a wrongful act in keeping a course so far to the eastward.

Secondly, with regard to the means which, if taken in due time, might have prevented the wreck, it appears by the statements of both the Master and Mate that, at 1.20 a.m. on the 24th, more than an hour before the ship struck, a remarkable light was observed, and excited conjectures as to its nature. It is described as a flashing light,—not steady or regular in its changes, like either a fixed or revolving light of a lighthouse. The Master professes to have observed this light with care, and some one called the attention of the look-out-man (an old fisherman) to it, who gave it as his opinion that it was a fisherman's light—as indeed it probably was, for the ship must at that moment have been drawing close in shore. The Master, however, sets it down as a ship's light, and determines to carry on his way without further regard to it.

The Mate, however, more cautious, goes below, and again works up the position of the ship, which he had worked up not more than an hour and a-half before. His object was to satisfy himself that it was not the light on Cape du Raz, and found it could not be so, for if it had been the Cape du Raz light, the ship must then have been on the Seine Ridge, which runs out from that point.

In this instance, again, it is impossible to avoid attaching blame to Capt. Lewthwaite, even supposing the course he had steered had not been objectionable. Under all the circumstances, his ignorance of the exact position of the ship, the darkness of the night, and the stormy state of the weather, and with such a warning as this light ought to have been of his proximity to the land, it was clearly his duty to have exercised more caution to have hove the ship to, or to have slackened her course and kept the lead continually going. Such appears to have been the prudent course which the Mate says he would, under the circumstances, have taken had he been in command of the ship.

That Capt. Lewthwaite adopted none of these, nor any other precautions, appears to be a great default on his part. And for the reasons stated, I am of opinion that the loss of the ship *Durham* was caused by the wrongful act and default of the Master. Some notice seems called for in regard to the condition in which the *Durham* was sent to sea.

Not being a passenger-ship, the provisions of the law required to be observed in regard to those ships were not applicable to her. But when it is considered that the lives of the crew, and the safety of a valuable cargo were dependent upon the right condition and seaworthiness of the vessel, in regard to the accuracy of her compasses, it might have been expected that the ship should not have been sent to sea on such a voyage, without having been swung for deviation.

In the course of this inquiry the protest of the Master made at Audierne, and his answers to certain interrogatories put to him, subsequently, by the British Consul at Brest, were produced. As these answers in some material points were at variance with the protest and with his statement before me, it was of importance that they should have been properly authenticated. The examined copy of the interrogatories and answers, signed and sealed with

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the seal of the Consul, purports that the Master had been sworn to the truth of his answers. This the Master denies was the case. This would deserve inquiry, and, if necessary, correction for the future.

I have the honour to be, My Lords, &c.

JAMES TRAILL.

I fully concur in the above report,

HENRY HARRIS, Nautical Assessor.

To the Lords Commissioners of the Privy Council for Trade.

OFFICIAL REPORT RESPECTING THE LOSS OF THE SHIP *LADY KENNAWAY*, OF LONDON.

EAST LONDON (Cape of Good Hope), Dec. 12, 1857,

The Chief Commissioner of British Kaffraria, having been pleased to nominate a Court for the purpose of inquiring into the circumstances attending the stranding of the ship *Lady Kennaway* (584,) on the afternoon of Nov. 25, 1857, we, the undersigned, having been Members of the said Court, after a very patient and careful inquiry, and from all the evidence we can obtain, do now give our opinion as follows:—

From the evidence produced, the Court is of opinion that the ship *Lady Kennaway*, brought up in a safe berth in the Roadstead off the Buffalo Mouth, in 12½ fathoms of water, one mile and a quarter from the shore; that although the wind on the day she was stranded was blowing a gale from E.S.E. the position of the ship was one of safety.

It appears that to an anchor of 27 cwt. on the starboard side, she had from the anchor to the 30 fathom shackle, an old and much worn 1½-inch chain; from the 30 to the 90 fathom shackle, a new chain of 1½-inch; and from this to where the cable was clenched round the waist, there was a length of 15 fathoms again of old 1½-inch chain—in all 105 fathoms, and a much-worn 1½-inch chain, only 105 fathoms in length. on to an anchor of 23 cwt. as port bower.

The Court is, therefore, of opinion that the cables were much worn, a great deal too light, and considerably short of the length fixed by Lloyd's as the scale for a vessel of the tonnage of the *Lady Kennaway*.

The Court is also of opinion that the ship was not supplied with proper means for stoppering the chains; and even had the vessel been provided with them, the manner in which the immigrant's cook-house came out over the ring-bolts in the deck quite precluded the possibility of the chain being properly ranged along the deck, as well as the stoppers being made fast to a place where they were likely to be of any material service.

It also appears, upon the ship parting the second time, no third anchor was in readiness for letting go—an omission showing, in the Court's opinion great neglect; and it is possible that, had a third anchor been let go upon the ship's head canting in shore, it would have brought her head again to seaward, and enabled her to stand off shore.

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The Court is also of opinion that, as the wind and the current, with the sea, were setting along the coast, rather off than otherwise, that the ship, after parting a second cable, might have been wore and got clear of the land had the proper means been adopted. Further, there can be no doubt there was an error in judgment in setting the main-try-sail and mizen, as these sails appeared from the shore to be fully set; and this, in the Court's opinion, prevented the ship from wearing and drove her on shore.

MATTHEW JENNINGS, Resident Magistrate.
W. J. FAGAN, D.A.C. General.
GEO. WALKER, Harbour Master.
H. S. PYBUS.
S. RICH, Master of the Brig *Unity*.

OFFICIAL REPORT
RESPECTING THE COLLISION OF THE SCHOONER *FAIRY* AND S. STEAMER *CORSAIR*.

THE final sitting of the Court appointed to inquire into the cause of the loss of the schooner *Fairy*, in the Firth of Clyde, on the 21st of October, 1857, was held in the Custom-house Belfast, for the purpose of reading the Report forwarded to the Lords of the Committee of the Privy Council for Trade, and their Lordships' Reply thereto.

Mr. Charles Hunt, stipendiary magistrate, assisted by Capt. Elliott, R.N., Nautical Assessor, formed the Court.

Mr. Charles Trevenen, Collector of Customs, was present; as were Mr. Morton, solicitor, for Mr. George K. Smith, on behalf of the Board of Trade; and Mr. M'Lean, for the Owners of the schooner *Fairy*. Captain Primrose, of the *Corsair*, was also in attendance.

Mr. Hunt said: It devolves upon me to carry out the instructions and directions of the Lords Commissioners of Trade, in London, which have just been received, in regard to the loss of the schooner *Fairy*, in collision with the steam-ship *Corsair*. The course I intend to adopt is, to read the report furnished to the Board of Trade, by those appointed to hold the investigation. I shall then read the Board of Trade's communication on the subject; and then say a few words, by their Lordship's direction, in the nature of an admonition to the Captain, in the hope that it will guide him in his conduct for the future,—the Board of Trade having, very humanely, and very considerately and leniently, determined to restore Capt. Primrose his certificate of qualification.

REPORT.

BELFAST, *January 4th*, 1858.

My Lords,—In accordance with the requisition of James Trevenen, Esq.

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the Principal Officer of Customs, and Receiver at the Port of Belfast, to hold a formal investigation, under the 433rd section of the Merchant Shipping Act, 1854, into the circumstances attending the loss of the schooner *Fairy*, in the Firth of Clyde, by collision with the screw-steamer *Corsair*, on the 21st October last, which casualty was attended with the loss of the life of John M'Auley, then and there on board of the *Fairy*, we have the honour to report that, assisted by Capt. Elliott, Inspecting Commander of Coast-guard at Carrickfergus, as Nautical Assessor, we commenced the investigation, at Belfast, on the 17th, and continued the same on the 18th, 19th, 22nd, 24th, and 29th December last, terminating on the day last mentioned. W S. Tracy, Esq. the stipendiary magistrate residing at Belfast, and a member of the Local Marine Board at that port, not being present;—Mr. Trevenen, and the respective solicitors on behalf of the Customs' establishment, of the owners of the *Fairy*, and the next of kin of John M'Auley, deceased, and of the owners of the *Corsair*, being in attendance,—

We beg to state, that the *Fairy* schooner, of 84 tons register, John Delargy, Master, James Delargy and William Delargy, and William O'Hara, owners—sailed from Larne on the 21st October last, with a crew of six hands, including the Master, bound to Glasgow, with a cargo of limestone—ship insured at half value—and had proceeded on her course so far as between Pladdah and Lamlash, which she reached about 9 30 or 9.40 p m. keeping close to the land, and carrying a light on her bowsprit end; weather showery, but not foggy; wind N.W. or W.N.W.

That the screw-steamer *Corsair*, of 190 tons register, Hugh Primrose, Master—the Saint Rollox Shipping Company, owners—sailed from Glasgow on the said last-mentioned day, with a crew of 19 hands, including the Master, with a cargo of general goods, for Belfast and Bristol—ship and cargo insured at unknown. That about 9.30 or 9.40 p.m. the lights of the respective vessels became mutually visible at the distance of two miles, or thereabouts, the *Fairy* being then, more or less, on the starboard bow of the *Corsair*, the latter carrying a white light at her mast-head, a green light at her starboard, and a red light at her port bow; and the former carrying a light at her bowsprit end, as before mentioned.

The *Corsair* immediately put her helm to port, and then steadied; and when the two vessels arrived within about a cable's length of each other, the *Corsair* put her helm hard to port; the *Fairy* at the same time put her helm to starboard, and the collision took place, the *Corsair* going at full speed, striking with (as appears to us) her port bow the starboard bow of the *Fairy*, whereupon the heads of both vessels were turned to the land, towards the Island of Arran.

That when the vessels fell alongside, the crew of the *Fairy* saved themselves by jumping on board the steamer, with the exception of the boy, John M Auley who was, at the time of the collision, in bed in the forecastle of the *Fairy*. That the *Fairy* went down in 10 or 15 minutes after the collision, and the *Corsair* shortly afterwards proceeded on her voyage

That, having weighed deliberately the evidence elicited during the investigation, and having more particularly considered that part of it, which we

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deem to be most worthy of credence, we are of opinion that the loss of the schooner *Fairy* was occasioned by the alteration of the course of the *Corsair* to starboard, when first the *Fairy's* light was reported on the *Corsair's* starboard bow, and that the *Corsair* was wrong in altering her course, under these circumstances.

We are further of opinion that, had the *Corsair* kept her proper course, as the *Fairy* appears to have done, no collision could have taken place. The proper course of the *Corsair* was S.S.W.¼W.

We are also of opinion that, had the positions and manœuvres of the two been such as have been described in the evidence adduced by the owners of the *Corsair*, the collision could not have taken place, and also, if the evidence on the part of the *Fairy* be true, the vessels would have gone clear of each other, had they kept their respective courses.

But we have to observe that, when the collision was imminent, the *Fairy* did not put her helm a-port, as directed by the Act of Parliament. The Master of the *Fairy* appears, by his own testimony, to be ignorant of the rules laid down by the said Act, as manifested by his reply, on cross-examination, that he thought it only applied to sailing vessels, and that steamboats should keep out of the way of sailing vessels.

We are of opinion that great blame is attached to the Master of the *Corsair*, in not having sent a boat to the *Fairy*, during the 10 or 15 minutes before the latter sank, or even afterwards, to examine the spot where she went down, to make sure the boy left on board was not floating.

We beg to observe that it appears to us, that a light on the bowsprit end only is insufficient to indicate the course of a ship. Had the schooner carried at her bows lights similar to those used by the steam-boats, this casualty would, in all probability, have been avoided. We beg to enclose the respective Certificates of Competency of the Master and Second Mate of the *Corsair*, to be dealt with as your Lordships may think fit.

We have the honour to be, my Lords, your Lordships' most obedient humble servants,

CHARLES HUNT, *Stipendiary Magistrate.*
W. T. B. LYONS, J.P.
J. E. ELLIOTT, *Nautical Assessor.*

To the Right Hon. the Lords of the Committee of the Privy Council for Trade.."

OFFICE OF COMMITTEE OF PRIVY COUNCIL FOR TRADE.
WHITEHALL, *Jan.* 14, 1858.

Sir,—I am directed by the Lords of the Privy Council for Trade to acknowledge the receipt of the report, dated the 4th of January, signed by you and W. T. B. Lyons, Esq., J. P., and by Captain J. E. Elliott, Inspecting Commander of the Coast-guard at Carrickfergus, Nautical Assessor in the investigation into the circumstances attending the loss of the schooner *Fairy*, by collision with the steam-ship *Corsair*.

The report is not of such a character as calls upon my Lords to cancel or suspend the certificates of competency of the Master

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and Second Mate of the *Corsair*. The certificates are, therefore, herewith enclosed, in order that they may be returned to the Master and the Mate; but, in restoring them to their respective owners, my Lords desire me to request that you will be so good as to admonish them to be more careful in future.

I am, Sir, your obedient servant,

JAMES BOOTH.

To *Charles Hunt, Esq.* Stipendiary Magistrate, Belfast.

Mr. Hunt continued: It remains, then, for me, in discharging this duty, to address a few words to Capt. Primrose, as the only person here present.

I regret to find, by a medical certificate from Glasgow, that Robert Reid, the Second Mate, is unable to attend here to-day, by reason of illness caught on his last visit to Ireland.

It is to be regretted that, on this occasion, there was not more caution, —more exertion used, on the part of the Captain and Mate of the steamer. When the schooner was discerned, no doubt Capt. Primrose did, as the Act directs, port his helm. At the same time, that Act vests in the Captain the discretionary power to alter his course, should a collision become imminent. Not having done so, and the young and inexperienced Captain of the schooner having gone to starboard, the collision was occasioned. It would be most desirable that those in command of such powerful vessels, for speed and otherwise, should not run risks by keeping so close, and running so near as that danger to smaller craft may arise. A steamer is strong and powerful in the ocean, but the Captain in command should be merciful, and take every care, by easing his engine, not to come in contact with other vessels, and particularly so in the Channel, where small craft are so numerous.

I must say that Captains of steamers are too confident in their vessels, and are apt to run risks, depending on their answering the helm, and thereby passing so close, that it is often "a touch and go;" but, should a chain get foul, or any other casualty occur by so doing, a collision is sure to take place. They should rather err on the safe side, and take ample space; but, when running up and down narrow channels particularly, steam should be shut off to half speed, so that no risk could be run, or the water so agitated as to endanger small craft. It is painful to reflect that there were not sufficient exertions and humane endeavours made to rescue the boy, John M'Auley, from a watery grave, had he succeeded in disentangling himself from the sinking ship.

You, Captain, must feel this subject deeply, and I hope it will have the desired effect of inducing you, should any other occasion ever arise requiring it, to manifest more determinedly that principle which belongs to, and is conspicuous in, the British seaman, of humanity and anxiety for the rescue of a fellow-creature in danger of being lost.

I am gratified in being permitted, through the authority deputed to me by the Board of Trade, to hand you back your Certificate, and I will, in conclusion, merely express my hope that, on all future occasions, Capt. Primrose will be able to show that he has learned by experience, and that he will give that satisfaction to his employers and the public, which, up to the present

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transaction, he had enjoyed for many years. The Certificate of Robert Reid, the Second Mate, I place in the hands of Mr. Trevenen, who will be kind enough to communicate with him, and to restore it, and to whom a copy of this my admonition shall be furnished.

ROYAL NATIONAL LIFE BOAT INSTITUTION.

A Meeting of this Institution was held on Thursday January 7, at its house, John-street, Adelphi;

Thomas Chapman, Esq., V.P. F.R.S. occupying the Chair.

The Silver Medal of the Society and £2 were voted to Mr. D. O'Sulivan, of the Coast Guard, £21 to other men, for rescuing, at the great peril of their lives, the crew, consisting of eleven men, of the Austrian brig *Sona Fratilla*; which, during an awful gale of wind, was wrecked off Black Ball Head, on the Coast of Cork, on the 2nd December.

A reward of £2 each was also granted to two fishermen, for putting off in their boat and rescuing, at the risk of their lives, the crew (three men) of the smack *Lady Emma*, which, during a heavy gale of wind, sank on Irvine bar, on the 15th December. A pilot boat manned by six men had previously attempted to reach the wreck, but the two fishermen persevered, and fortunately succeeded in taking off three men. Their boat was several times filled by the heavy seas rolling into her, and the whole were in great danger of perishing.

A reward of £7 was also voted to seven men, in consideration of their valuable services in putting off in their coble and rescuing, at the risk of their lives, the crew (five men) of the brig *Zillah*, of Whitby, which, during a gale of wind, was wrecked off Winterton, Norfolk.

During the past month the Institution had transmitted to the Australian Colonies several sets of life-boat and transporting carriages.

A communication was read from the Board of Trade, expressing their approval of the manner in which the Institution managed its life-boats, and promising their continued support from the Mercantile Marine Fund in aid of the contributions of the public towards the maintenance, in full vigour, of the Society.

It was reported that the Norfolk Shipwreck Association had joined the Institution. The Inspector of Life-Boats to the Society had, thereupon, immediately proceeded to examine the life-boats on the Norfolk Coast. His report, which was read to the meeting, was full of recommendations regarding the renovation of some of the life-boats. Measures were adopted to carry out forthwith those recommendations.

The Institution had at present, it was said, seventy life-boats

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in connection with it, to most of which were attached coxswains or masters and a volunteer crew, who went afloat in the boats every quarter for exercise. The average expense of each life-boat, in this respect alone, was £20 a-year; besides the large expense of keeping the life-boat establishment in a thorough state of repair.

The Society is also now building life-boats for Hastings, Holyhead, Groomsport, Ardmore, and several other places, and its liabilities for these and for boat-houses and transporting carriages, are nearly £3,000.

Under these circumstances the Institution makes an urgent appeal for public support, which we hope will be given to it, for amongst the many useful societies in this country, none is more valuable than the National Life-Boat Institution. By the deaths of Admirals Earl Spencer and Sir Francis Beaufort, together with that of the Earl of Ilchester, the Institution had, it was said, lost liberal annual contributors to its funds.

NAUTICAL NOTE.

Straits of Negropont or Euripus:—The works undertaken for the purpose of deepening the Straits which separate the Island of Eubœa (Negropont) from Bœotia, have progressed so far that vessels drawing 4½ metres, or about 14 feet, English, may pass through at any time.

The following rates of tolls have been adopted for vessels passing through:—

Vessels of 20 tons, 50 leptas per ton.
„ from 20 to 50 tons, 30 leptas per ton.
„ from 50 to 100 tons, 20 leptas per ton.
„ from 100 to 300 tons, 15 leptas per ton.
„ above 300 tons, 10 leptas per ton.

REWARDS AND TESTIMONIALS.

On December 4th, 1857, the *Star*, of New Ross, arrived at Charleston, having on board the master and three of the crew of the *Northern Light*, of Bucksport, State of Maine, who had been rescued therefrom, after clinging to the rigging for 15 days, during which time they had no other provisions than a little raw flour mixed with rain water; Capt. Wallace McLennon came to their aid and supplied them with clothes, nursed them through a long illness, and otherwise treated them with the greatest

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kindness,—The Secretary of State for the United States having been made acquainted with the case, by the owners of the *Northern Light*, presented to Capt. Wallace McLennon, in the name of the President, a superb Silver Speaking Trumpet, with appropiate emblems, as a mark of acknowledgment of the humane and generous treatment experienced by the distressed American crew.

The Board of Trade have awarded to John Munro, of Turbet, parish of Eddrachillis, Sutherlandshire, father of **John Munro**, a seaman, who was drowned in endeavouring to save the lives of the crew of the *Walton Muncaster*, which was wrecked in the Pacific on the 27th June last, the sum of £10, as a mark of approbation of the gallant conduct of his son, and also the Board of Trade Silver Medal, for gallantry in saving life at sea, to which his son would have been entitled, had he survived.

Captain Bruins, of the Dutch galliot *Stientze Boemeling*, has been presented, by the Board of Trade, with a Telescope, for rescuing the master and crew of the *Countess of Durham*, from that vessel, when in a sinking state.

The Owners and the Master and Crew of the Spanish fishing vessel *Adan*, have been presented, by the Board of Trade, with the sum of £120, for subsistence and loss, &c., incurred in rescuing the master and crew of the British schooner *Betsey*, of London, on the west coast of Africa. The Foreign Office has also awarded a Gold Medal to the Captain of the *Adan*, for his gallantry on this occasion.

Capt. Rose, of the steam ship *Cumberland*, has been presented by the Board of Trade, with the sum of £10, for his humanity in promptly rendering assistance to the master and crew of the wrecked vessel *Bowling*.

The Board of Trade have presented **Captain Petersen**, of the Danish schooner *Haabet*, with the sum of £30, and a Silver Medal, for his gallant and humane conduct in rescuing the ship-wrecked crew of the *Ann M'Kenzie*, of Stockton.

Captain Robins, of the *Colima*, of St. John, N. B., has been presented by the Board of Trade, with a Telescope, for rescuing the shipwrecked master and crew of the *Wallace*, of Leith.

The Board of Trade have presented **Captain Kuhlmann**, of the Bremen ship, *Hermann*, with a Telescope, for gallant conduct, in rescuing the master and crew of the *Hibernia*, of London, which vessel was wrecked on the 6th of December last.

Capt. J. Pean, of the French barque *Elizabeth*, has been presented, by the Board of Trade, with a Telescope, bearing a

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suitable inscription, for rescuing the master and crew from the waterlogged ship *Columbus*.

Joseph Tregose, late a seaman on board the *Dennis Brundrit*, has been presented by the Board of Trade, with the sum of £20, and a Silver Medal bearing the following inscription :—Joseph Tregose, for gallant exertions made to save the crew of the *Walton Muncaster*, in June 1857.

The sum of £10 has been given by the Board of Trade to Emma Furnice, widow of **Robert Furnice**, mate of the *Dennis Brundrit*, who lost his life in endeavouring to rescue the shipwrecked crew of the *Walton Muncaster*, in June 1857,

Capt. Boster, master of the Hamburg barque *Helene*, has been presented, by the Board of Trade, with a Telescope, for rescuing a portion of the shipwrecked crew of the *Walton Muncaster;* and to each of the seamen who manned the boat on that occasion, the sum of £2.

The *Davenport*, of Plymouth, was wrecked on the 4th of December last, on her passage from Quebec to Cardiff, when the master, his wife, and crew, (in all eighteen persons), were rescued by **James Meyer**, master of the *Donau*, belonging to the Hamburg Steam Shipping Company, and safely landed at New York on the 22nd December, after having received the greatest kindness and attention from Captain Meyer. The British Consul at New York having reported to the Lords of the Committee of Privy Council for Trade, that the master had refused to accept any remuneration for the subsistence of the shipwrecked crew,—their Lordships have been pleased to direct, as a mark of their approbation of his meritorious services, and kindness shown to British seamen when in distress, that a set of Telescopes, bearing a suitable inscription, should be presented to him.

The *Volo*, of Exeter, was abandoned in a sinking state on the 1st Jan. 1858 in lat. 36°N. and long. 17°E. during a heavy sea, when the master and crew were rescued by the Greek brig *Stamati*, **Capt. Nicholas Gereme**, who voluntarily put back and landed them in safety at Malta, on the 7th January, after receiving the grateful thanks of the shipwrecked crew for the kind attention they had received, during the time they were on board his vessel.—The Board of Trade have been pleased to direct that a Telescope, bearing a suitable inscription, should be presented to Capt. Gereme, for his generous and humane conduct towards the distressed British seamen.

On the 12th November 1857 the British brig *Mary Ann Newett*, whilst on a voyage from Cardigan to the Cape of Good Hope,

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was totally dismasted off Fernando de Noronha; the master rigged jury masts, and made the best of his way to Pernambuco, but, falling to leeward about 8 or 10 miles north, would in all probability have been lost upon the reefs, had it not been for the prompt and generous assistance rendered him by **Capt. Bendixen** of the Danish ship *Himalaya*, of 700 tons, who towed the *Mary Ann Newett* into the roadstead, at the imminent risk of losing his own ship upon the Olinda rocks.—The Board of Trade, in consideration of the generous conduct of Capt. Bendixen, have awarded him a handsome Telescope, with a suitable inscription.

Capt. Robert Sinclair, of Leith, has lately been presented with a valuable Gold Pocket Chronometer, in hunting cases, together with a massive Gold Chain and appendages; the chronometer bears the following inscription:—"Presented by the Russian Steam Navigation and Trading Company, to Capt. Robert Sinclair, in testimony of their appreciation of the valuable services rendered by him, at Leith. 1857." Through William Miller, Esq. agent for the Company, London.

The Board of Trade has awarded to **Capt. Stephen Percy**, of the *Jessie*, of St. John's, Newfoundland, a Silver Medal for aid in rescuing on 4th December last, 63 persons, being passengers and crew of the American ship *Northumberland*.

A severe storm raged from the 16th to 19th January, at Fayal, when nine vessels were driven on shore and became total wrecks. During the height of the gale, **George Turner Porter**, second mate, and **Samuel Williams**, seaman of the steamer *St. George*, of Newcastle, lowered a boat and dropped her by lines alongside of the *King Alfred*, by which means the whole of the crew were placed in safety on board the *St. George*.—The British Consul at Fayal having represented the facts to the Board of Trade,—their lordships have awarded the Bronze Medal for "gallantry in saving life at sea," to George Turner Porter and Samuel Williams.

CERTIFICATES SUSPENDED.

A Naval Court, under the provisions of the Merchant Shipping Act, was held at the British Consulate, St. Thomas's, West Indies, on the 28th December, 1857, to investigate charges of drunkenness and disrespectful language, preferred by Thomas Peacock, the master of the *Felicity*, of Sunderland, against Richard Cooch, the mate thereof, and it having been clearly proved, that whilst on duty he had been intoxicated, and used abusive language to the master, the Court trans-

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mitted the Certificate of Service, No. 36,992, belonging to the said Richard Cooch, to the Board of Trade, to be dealt with as it might determine.—the Board of Trade have since directed that the said Certificate of Service should be suspended for Two Months.

CERTIFICATES CANCELLED.

John Jones, mate of the *Mutlah*, of Livepool, (official No. 17,775) was recently charged before the magistrate at Liverpool, with having deserted his vessel after receiving an advance note; and, having been committed to prison for ten weeks, with hard labour, for this offence. —the Board of Trade have given directions for the Cancellation of his Certificate of Service, No. 62,354.

Duncan James Boyle. Mate of the *Creole*, was tried before W. S. Tracy, Esq, at the Police Court, Belfast, on the 29th January, and sentenced to Four Months imprisonment, with hard labour, for stealing ropes from the said vessel.—The Board of Trade have been pleased to direct that his Certificate of Service, No. 72,983, shall be Cancelled.

ROCKS AND SHOALS.

Formosa Banks, China Sea.—There is probably less water on these Banks than the charts at present represent; Capt. Livingstone, of the *Sea Star*, of Glasgow, reports that he recently struck the ground in lat. 23° 19′N., and long. 118° 53′E., and carried away part of his keel. The depth he considered to be about 15 feet, and High Island bore E.½S. about 20 miles.

N. Pacific Ocean.—The British ship *Claremont*, at San Francisco, from Hong Kong, reports:—Nov. 7, 1857, at 3 A.M. lat. 30° 33′N., long. 140°E., saw an island, supposed to be Todos Los Santos, but in a different place from that given by Horsburgh, but agreeing with St. Peter's Island, in Moore's Epitome, and nearly with an island marked on Findlay's chart.

[Probably Ponafidin Island, lat. 30° 31′N. (P) long. 140° 15′E. (P) which has, at different times, been named St. Thomas, St. Peter, Santos, and Three Hill.]

China Sea.—Capt. T. J. Duggan, of the *Truro*, reports:—On my passage from Singapore to Hong Kong, on Sept. 30, 1857, whilst taking my forenoon observation for longitude, I looked down at the water, and distinctly saw the bottom (white coral). Got a cast of the lead instantly at 10 fathoms; again, about

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half-a-mile more north, got 19 fathoms; still steered north for another half mile, got 22 fathoms, and the next time no bottom at 40 fathoms. I went to the mast-head, but could not discover with the eye any shoaler patches. The 10 fathoms cast was, by good observations, in lat. 16° 19′N., long. 116° 41′E. As there is nothing of the kind marked on any chart, I have called it the Truro Shoal.

[This Shoal appears to be to the Eastward of the Macclesfield Bank, and to the N.W. of the Scarborough Shoal.]

CONDENSED LIST OF

CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from January 25th, 1857, to February 25th, 1858.

South Australia—Port Phillip—Alteration of Swan Spit Light.—On and after the 15th of November 1857, the Light Vessel moored off Swan Spit, at the south entrance of the West Channel into Port Phillip, would exhibit a Red Light instead of the White Light hitherto shown.

North Coast of France,—Two Harbour Lights at Dielette, —These two Lights are placed one on the Jetty-head, the other at the end of the Harbour above the Road which leads from Diélette to Flamanville. When in line, they lead into the Harbour.

The Light on the Jetty-head is a Fixed White Light, at 23 English feet above the level of high water, and should be seen in clear weather at a distance of 5 miles.

The Light at the end of the Harbour is a Fixed Red Light, and stands at 169 yards to the south-east of the former. It is placed at a height of 75 feet above the level of high water, and should be visible 9 miles in clear weather.

The Light on the Jetty-head is in lat. 49° 33′ 7″N.; long. 1° 51′ 45″W. of Greenwich.

West Coast of France—Light on Tristan Isle, Finistere: —This Light is a Fixed White Light placed at a height of 114 feet above the level of high water, and should be visible from the deck of a ship in clear weather at a distance of 10 miles.

The Light-tower has been recently erected on the Islet of Tristan, in the Bay of Douarnenez, at the entrance to the Harbour of that name on the coast of Finistere. It is 32 feet high

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from the ground, and stands in lat. 48°6'12"N.; long. 4°21'22"W. of Greenwich.

West Coast of France—Light at Lanriec, Finistere:—This Light is a Fixed Red Light, placed at a height of 42 feet above the level of high water, and should be visible from the deck of a ship in clear weather at a distance of 9 miles.

This Light on the coast of Lanriec, to the eastward of the harbour Concarneau, is intended to guide to the anchorage the vessel which may have passed the shoal of Men-Fall, after having followed the direction of the existing Lights of Concarneau, namely, that of the battery La Croix, and that of the heights of Beuzec. It will only light an area of 19° free of danger, and the line of separation of light and darkness on the south side will pass about 90 yards to the north of the shoal Men-Fall. The Light will be lost sight of before the vessel reaches the shore on which it stands. Lat. 47° 52' 3"N.; long. 3° 54' 45"W. of Greenwich.

Directions. The mariner who wishes to enter the little roadstead of Concarneau by night should keep very exactly (especially when he has reached near to the Cochon shoal) on the line pointed out by the two Fixed White Lights of the battery La Croix and of Beuzec, until he sees Lanriec Red Light on the right, when he should steer for it.

United States—Florida Reefs,—Fixed Light off Dry Bank, Coffin Patches:—The Light will be a Fixed White Light, placed at an elevation of 141 feet above the mean level of the sea, and should be visible from the deck of a vessel in ordinary weather at a distance of 19 miles all round the horizon.

The Light will be exhibited on or about the 15th of March, 1858.

The Lighthouse is in course of erection near the outer edge of the reef; it is an iron pile structure with a keeper's dwelling 47 feet above the water, from which rises a tower surmounted by a lantern, the whole being 154 feet high and coloured Red.

Its position is in lat. 24° 37' 36"N.; long. 81° 6' 43"W. of Greenwich, by the U S. Coast Survey.

United States—Florida Reefs,—Alteration of Carysfort Reef Light:—Simultaneously with the first exhibition of the Light off Dry Bank, on or about the 15th of March 1858, the present Fixed Light on Carysfort Reef, to the eastward of Cay Largo, will be changed to a Revolving Light, showing a Bright Flash every half-minute, placed at an elevation of 106 feet above the mean level of the sea, and visible from the deck of a ship in ordinary weather at a distance of about 18 miles.

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The approximate position of this Light is in lat. 25° 13′ 15″N.; long. 80° 12′ 44″W. of Greenwich.

Caution. Mariners are particularly cautioned not to mistake one of these Lights for the other after the exhibition of the new Fixed Light, and the change of the Carysfort Reef *Fixed* Light to a *Revolving* Light.

Pacific Ocean—Washington.—Fixed Light at Tatouch Island,—Cape Flattery:—On and after the 28th December, 1857, a Light would be exhibited from the lighthouse recently erected on the highest part of Tatouch Island, off Cape Flattery of the U.S. Charts, (Cape Classet of Vancouver,) on the south side of the entrance to the Strait of Juan de Fuca.

It is a Fixed White Light, placed at an elevation of 162 feet above the mean level of the sea, and should be visible from the deck of a ship in clear weather at a distance of 19 miles.

The lighthouse consists of a keeper's dwelling of stone, with a tower of brick, Whitewashed, rising above it, and surmounted by an Iron Lantern painted Red, the height of the whole being 66 feet. It stands in lat. 48° 23′ 15″N.; long. 124° 43′ 50″W. of Greenwich, as determind by the U.S. Coast Survey.

Pacific Ocean—Fixed Light at New Dungeness—Juan de Fuca Strait:—On and after the 14th December 1857, a Light would be exhibited from the lighthouse recently erected about one-sixth of a mile from the outer end of the spit of New Dungeness, on the south side of the Strait of Juan de Fuca.

It is Fixed, White, and placed at a height of 100 feet above the mean level of the sea. It should be seen in clear weather from the deck of a vessel distant 15 miles.

The lighthouse consists of a keeper's dwelling of stone, with a tower of brick, the upper half coloured Dark Lead, the lower half White, rising above it, and surmounted by an Iron Lantern painted Red, the entire structure being 92 feet high. Its approximate position is in lat. 48° 11′ 45″N.; long. 123° 7′ 30″W. of Greenwich, by the U.S. Coast Survey.

A FOG BELL has also been placed on the extreme outer end of the spit of New Dungeness, and would be sounded during foggy or thick weather, day and night, from the same date. The distinctive mode of striking the bell will be published hereafter. The machinery is in a frame building, with the front open to receive the Bell painted Black, and raised 30 feet high above the ground on an open structure Whitewashed.

Gulf of Mexico—United States—Fixed Light at Barrataria Bay, Louisiana.—A Light is now exhibited from the lighthouse recently erected inside of Fort Livingstone, on Grand Terre Isle, at the eastern side of the entrance to Barrataria Bay, Louisiana.

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It is a Fixed White Light, elevated 60 feet above the mean level of the sea, and should be visible from the deck of a vessel in ordinary weather at a distance of 13 miles.

The light tower is of octagonal form, built of brick, 55 feet high, and coloured White. Its approximate position is in lat. 29° 16′ 44″N.; long. 89° 54′ 30″W. of Greenwich.

Gulf of Mexico—U.S.—Fixed Light at Timballier Bay, Louisiana.—A Light is exhibited from the lighthouse recently erected on the west side of the Grand Pass of Timballier, at the entrance to Timballier Bay, Louisiana.

It is a Fixed White Light, placed at an elevation of 60 feet above the mean level of the sea, and should be seen from the deck of a ship in ordinary weather at the distance of 13 miles.

The light tower is octagonal, of brick, 55 feet high, and Whitewashed. It stands in about lat. 29°4′N.; long. 90°16′30″W. of Greenwich.

Mediterranean—Coast of Spain—Fixed Light on Cape Santa Pola:—On and after the 23rd of January 1858, a Light would be exhibited from the Tower of Talayola, on Cape Santa Pola, in the province of Alicante.

It is a Fixed White Light, placed at an elevation of 505 English feet above the sea, and should be visible in clear weather at a distance of upwards of 5 miles from S.S.W.$\frac{3}{4}$W., round easterly to N.E.$\frac{1}{2}$N.

The tower is square, 30 feet in height, and painted with a Dirty White colour. It stands about 395 yards from the sea, with the lighthouse on Plana or Tabarca Isle, bearing S.S.E.$\frac{1}{2}$E., and Cape Huertas lighthouse N.E.$\frac{3}{4}$E., in lat. 38° 12′ 30″N.; long. 0° 30′ 8″W. of Greenwich.

Directions.—In proceeding to the roadstead of Lugar Nuevo or Santa Pola, and passing inside Plana Isle, the directions relative to the Tower of Talayola given in Tofino's Spanish Pilot must be attended to, and it must be borne in mind that this light is placed at 24 feet above the upper part of the window mentioned in that work.

[*All bearings magnetic. Variation* 18° 40′ *W. in* 1857.]

Baltic—Gulf of Finland.—Fixed Lights in Kronstat Roads:—Lights are exhibited from two wooden lighthouses erected on Nicholas Battery, Kronslott or Castle, on the south side of the roadstead of Kronstat.

The upper or eastermost is a Fixed White light, illuminating an arc of 10° from W.N.W.$\frac{1}{2}$N. to W.N.W.$\frac{1}{2}$W., and visible in clear weather at a distance of about 9 miles. It is also visible to the eastward from N. byE. to S.byW.

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The lower light is Fixed, Red, and may be seen westward, in clear weather, from a distance of about 8 miles. The limits of its angle of illumination are not strongly defined, and the light can be seen when on the shoals in the Roads.

Directions.—Vessels navigating the western roadstead of Kronstat at night may proceed with safety by keeping these lights in line W.N.W., which leads through mid-channel, or by keeping the White upper Light in sight. In order to maintain a clear channel, no vessel will be allowed to anchor on the bearing of these two Lights in line.

[*All bearings are magnetic. Variation, 5° W. in 1857.*]

Mediterranean—Sicily—Fixed Red Light on Formiche Islet.—On and after the 1st of March 1858, a Light will be exhibited from the north-east point of the tower on the larger of the two Formiche Islets, off Trapani, west coast of Sicily.

It will be a Fixed Red Light, placed at an elevation of 85 feet above the sea, and should be visible in clear weather at a distance of 10 miles.

The Light tower stands in lat. 38° 0′ 46″N.; long. 12° 26′ E. of Greenwich.

NEW BOOK.

MEMOIRS OF THE LIFE AND SERVICES OF REAR-ADMIRAL SIR WILLIAM SYMONDS, K.C.B. *Surveyor of the Navy from* 1832 *to* 1847. Edited by JAMES A. SHARP. *Longman & Co.*

This book is the biography of a thorough seaman, and a practical ship-builder of unquestionable merit. In his youth, William Symonds "smelt powder" in several of those famous sea-fights, which threw such lustre over the British Navy at the commencement of the present century. Subsequently, having made Naval Architecture his study, his views met with favour from persons interested in the subject. When certain official obstacles were cleared away, he was permitted to try his hand on the Royal Navy, and so far succeeded in whatever he undertook, that he was appointed Surveyor to the Navy in 1832. It was in this department that he made his reputation. The biography is well-written and interesting, and should therefore find a large class of readers, both in the Navy and Merchant Service.

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NEW MARINE PRINT.

H. M. STATE YACHT VICTORIA AND ALBERT, leaving Gravesend, with their R. H. the Prince and Princess Frederick William of Prussia. *W. Foster*, 114, *Fenchurch Street.*

We have great pleasure in calling attention to the Portrait of H.M. State Yacht *Victoria and Albert*, which Mr. Foster, with his usual desire to cater for the Public, has just issued. The Portrait itself has been executed by T. G. DUTTON, Esq. Marine Artist, with his usual skill and taste in such matters. We trust it will meet with the success it merits, from the judicious care with which it has been produced.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, in February, 1858. Sold by J. D. Potter, 31 Poultry, and 11 King Street, Tower Hill, London; and the principal Chartsellers in the Kingdom.

		s.	d.
Gulf of St. Lawrence.	Miramichi Bay. Capt. Bayfield, R.N. 1837...	3	0
Nova Scotia.	Yarmouth to Petit Passage. Commander Shortland, R.N. 1855	3	0
Do.	Gulliver's Hole to St. Croix Bay. Commander Shortland, R.N. 1856.	3	0
East Indies.	Ceylon Island, South Coast, from Columbo to the Bassas Islets, and 4 plans. Messrs. Twynam and Stewart, Master Attendants. 1838.	3	0
China Sea.	Macao to Canton. Corrected by the late Capt. W. Thornton Bate. 1858	2	0
African Lights.	Corrected to February, 1858. By Commander Dunsterville, R.N.	0	3
British North American Lights.	Corrected to March, 1858. By Commander Dunsterville, R.N.	0	6
West India Lights.	Corrected to March, 1858. By Commander Dunsterville. R.N.	0	6
East India Lights.	Corrected to March, 1858. By Commander Dunsterville. R.N.	0	6

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, ***care of Mr. W. Foster, 114, Fenchurch Street, London.***" ***N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication but as a guarantee of good faith.***

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THE

MERCANTILE MARINE

MAGAZINE.

MAY 1858.

THE WINDS OF THE WESTERN COAST OF THE UNITED STATES.

TIDES, VARIATION OF THE COMPASS, AND DIP OF THE NEEDLE.

(Continued from page 98.)

ASTORIA AND SAN DIEGO:—In general, the winds at these two places resemble each other more than those at San Francisco do either. April, May, June, July and August have the same general character.

The N.W. wind is the summer wind and has the characteristics of the sea breeze, but there is no return land breeze. The N.W. wind reaches a maximum in July, and a mininum in December. It is the great prevailing wind of the year at San Diego. As it decreases it is generally replaced by W. and S.W. winds of less quantity. In December the quantities of the three winds are nearly equal.

The resemblance of these winds at San Diego and Astoria is remarkable, the remarks just made applying generally to both places. There is, however, much less N.W wind at Astoria than at San Diego. Except in June, July and August, there is some S. wind each month at Astoria, and especially from September through October, November, December and February. At San Diego this is less marked, the two agreeing most nearly in quantity in March, April and May.

The S.E. wind is a distinct feature in both places in February and March, and at San Diego in April and June.

The E. wind is prominent at Astoria in January, February and March, and the N.E. from October to January, inclusive.

Astoria has the most easterly wind, the N.E. beginning in

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October and blowing until February, and being replaced by the E. wind in March.

The summer is the windy season on the West Coast,—July being one of the windiest months of the year.

TIDES :—The following appears to be the "Corrected Establishment" for each of the places named below :—

Columbia River (Cape Disappointment)	11h	44m
Port Orford	11	26
Humboldt Bay	11	53
Bodega	11	10
San Francisco, north beach	11	47
Point Santa Cruz	10	13
Point Pinos (Monterey)	10	20
San Luis Obispo	10	1
Point Vincent (San Pedro)	9	27
San Diego Bay	9	32

VARIATION OF THE COMPASS AND DIP OF THE NEEDLE :—During the progress of the U.S. Coast Survey, observations of the terrestrial magnetism were made at most of the astronomical stations, and near many capes and harbours where a knowledge of the *Variation of the Compass* was requisite for the use of navigation. We select the following, as connected with the places respecting which the winds and tidal establishments have been given :—

Cape Disappointment	*Var.*	20°	19′	E.			in 1851
Humboldt Bay	„	17	4	E.			in 1854
San Francisco	„	15	27	E.			in 1852
Point Pinos	„	14	58	E.			in 1851
San Luis Obispo	„	14	17	E.	*Dip.* 59°	42′	in 1854
San Pedro	„	13	31	E.	„ 59	33	in 1853
San Diego	„	12	32	E.	„ 57	39	in 1853

VARIATION OF THE COMPASS, BRITISH NORTH AMERICA, 1858.

The following information respecting the Variation of the Compass on the coasts of British North America, (in continuation of similar notices relating to the British Isles, (see *Mer. Mar. Mag.* vol. iv. p. 270-1,) North and Baltic Seas, (*Mer. Mar. Mag.* vol. v.

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p. 75-7,) and Mediterranean Sea, (*Mer. Mar. Mag.* vol. iv. p. 302-4,) published by the Admiralty,) is made public in order to apprize mariners of the gradual increase in the variation; as also to enable them and agents for the sale of charts to correct the numerous Sailing Directions and charts now in use, in which the amount is erroneously noted:—

On the coasts of Nova Scotia, and in the River St. Lawrence, the general direction of the lines of equal variation is N.W.$\frac{1}{2}$W., and S.E.$\frac{1}{2}$E. (true), Gulf of St. Lawrence N.W. by W. and S.E. by E. (true), Newfoundland and Belleisle Strait, N.W. by W.$\frac{1}{2}$W. and S.E. by E.$\frac{1}{2}$E. (true).

The present annual *increase* in the variation is about 4′ in the River St. Lawrence, 5′ on the coasts of Nova Scotia, 6′ in the Gulf of St. Lawrence, and 7′ on the coasts of Newfoundland and Belleisle Strait.

BAY OF FUNDY.

At Cape Fourchu	16°W.
Bryer Island	16½ „
Passamaquoddy Bay	17 „
Digby	17½ „
St. John's, New Brunswick	18½ „
Cumberland	20½ „

COASTS OF NOVA SCOTIA, BRETON AND PRINCE EDWARD ISLANDS.

At Cape Sable	16½°W.
Liverpool	17½ „
Halifax	19½ „
Sable Island	21 „
Gut of Canso	22½ „
Pictou and Miramichi Bay	21¾ „
Cape Breton, (Scatari Light) and Sydney	24½ „
Cape North, Breton I.	25½ „

SOUTH COAST OF NEWFOUNDLAND,

At Cape Ray	27½°W.
Miquelon Island	28 „
Placentia	30 „
Cape Pine	29½ „

EAST COAST OF NEWFOUNDLAND, AND BELLEISLE STRAIT ENTRANCE.

At Virgin Rocks	30½°W.
Cape Race	29½ „
St. John's	31½ „
Cape Bonavista	33 „
Cape Freels, Notre Dame and White Bays	34 „
Canada Bay	35½ „
Cape Bauld	37½ „
Belle Isle	38½ „

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BELLEISLE STRAIT, WEST COAST OF NEWFOUNDLAND, AND LABRADOR COAST.

At Cape Norman	37½°W.
Anchor and Forteau Points	36¼ „
St. John's and Shecatica Bays	34¾ „
Bonne Bay and Cape Whittle	31½ „
Port-au-Port Bay and Natashquan Point	30 „
Mingan Islands	28 „

GULF OF ST. LAWRENCE.

At St. Paul Island	26¼°W.
Bird Rocks	26½ „
Amherst Island (Magdalen Ids.)	24¾ „
Chaleur Bay, entrance	24 „
Dalhousie, Chaleur Bay	22¼ „
Capes Gaspé and Rozier	25½ „
Anticosti Island, East Cape	28 „
„ S.W. and west points	27 „

RIVER ST. LAWRENCE.

At Cape Magdalen	25½°W.
Seven Islands	26 „
Cape Chatte	24 „
Point des Monts	23½ „
Bic Island	20¼ „
Green Id. and River Saguenay	19 „
Coudres Island	16¾ „
Quebec	15 „
Montreal	11 „
Kingston	6 „

WRECKS AND CASUALTIES

ON OR NEAR THE COASTS OF THE UNITED KINGDOM, DURING 1857.

AN Abstract of the Returns made to the Lords of the Committee of Privy Council for Trade, of the Wrecks and Casualties which occurred on and near the Coasts of the United Kingdom, *from* 1*st January to* 31*st December*, 1857, together with the particulars relating to the Saving of Life from Shipwreck, having been prepared with more than ordinary care by Commander R. Robertson, R.N. Surveyor-General, we propose, in the following pages, to condense the information therein contained, and our readers will be enabled to contrast it with a similar statement for 1856, which appeared in the Mer. Mar. Mag. Vol. IV. p. 136-141.

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The Appendix to the Report consists of Three Parts, subdivided into a series of Tables, as follows:—

Part I gives the Wrecks and Casualties reported to have occurred on or near the Coasts of the United Kingdom:—

Table I.—*Wrecks and Casualties, distinguishing the months in which they happened:*—January 281; February 64; March 166; April 76; May 33; June 34; July 33; August 75; September 66; October 135; November 94; December 86.

Which may be further shown as follows:—

In the 1st quarter of the year	- - -	511
„ 2nd „	- - -	143
„ 3rd „	- - -	174
„ 4th „	- - -	315
Total wrecks and casualties		1143

Total in 1855,	1141 vessels ...	176,544 tons	
„ 1856,	1153 „	229,936 „	10,014 hands
„ 1857,	1143 „	218,570 „	9,819 „
	1146·6 average of three years		

Table II.—*Wrecks and Casualties, distinguishing British from Foreign Ships, Sailing Ships from Steamers, and Coasters from Oversea:*—

Registered in the United Kingdom:

Sailing ships:—Coasting colliers 132; other coasters 474; Oversea 249.

Steamers:—Coasters 18; Oversea 17.

Registered in the Colonies:—Coasting 8; Oversea 25.

Foreign vessels:

Sailing ships:—Coasting 4; bound to or from British Ports, but not in the British Coasting Trade 157; passing the United Kingdom, but bound from and to ports out of the United Kingdom 50.

Steam ships 2.

Casualties to ships whose country and employment are unknown 7. Total 1143.

Table IV.—*Wrecks and Casualties, distinguishing the Cargoes of the Ships:*—Ballast, not Colliers 138; Colliers 382; Colliers in ballast 62; Cotton 8; Fishing smacks 15; Fish or Oil 20, Grain, Oatmeal, Flour, and Provisions 90; General Cargo 85; Metallic Ores 88; Manure, Kelp, or Oilcake 5; Passengers and general cargo 21; Potatoes or Fruit 16; Salt 38; Sugar, Coffee, Spices, Tea or Molasses 10; Stone, Slate, Lime, or Bricks 50; Timber or Bark 73; Wine or Spirits 6; Various or unknown 26.—Total 1143.

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TABLE V.—*Wrecks and Casualties, distinguishing the Description and Tonnage of the Ships:*—Steam-ships 39; Barques 129, Brigs 311; Brigantines 51; Chasse Marée 1; Cobles 1; Cutters 8; Dandy 3; Flats 4; Galliotts 21; Hookers 1: Ketches 5; Keels 2; Luggers 11; Ships 58; Schooners 354; Sloops 68; Smacks 65; Snows 8; Yachts 1; Unknown 2.—Total 1,143.

Vessels under 50 tons - - - - - -	172
51 and under 100 tons - - - - - -	321
101 and under 300 tons - - - - - -	473
301 and under 600 tons - - - - - -	114
601 and under 900 tons - - - - -	43
901 and under 1200 tons - - - - -	7
1200 tons and upwards - - - - - -	13
Total	1143

TABLE VI.—*Wrecks and Casualties, distinguishing the Parts of the Coasts on which they happened:*—East Coast—Dungeness to Pentland Forth (inclusive) 600; South Coast—Land's End to Dungeness (exclusive) 84; West Coast—Land's End to Greenock (inclusive) 286; Irish Coast 100; Scilly Islands 8; Lundy Island 11; Isle of Man 15; Northern Islands—Orkney, Shetland, Hebrides, Islay, Campbelton, and North Coast of Scotland 39. Total 1,143.

TABLE VII.—*Wrecks and Casualties, distinguishing them according to the Force of the Wind:*—(0) calm 18 vessels; (1) light airs 32; (2) light breezes 76; (3) gentle breezes 46; (4) moderate breezes 86; (5) fresh breezes 189; (6) strong breezes 139; (7) moderate gales 85; (8) fresh gale 71; (9) strong gale 134; (10) whole gale 148; (11) storm 94; (12) hurricane 25. Total 1,143.

TABLE VIII.—*Wrecks and Casualties, distinguishing the description of Certificates held by the Masters of the Ships:*

Number of vessels commanded by Masters holding Certificates of Competency—Home Trade -		79
Ditto	ditto Foreign Trade -	133
Ditto	holding Certificates of Service—Home Trade - - - - - - - - - -	198
Ditto	ditto Foreign Trade -	97
Ditto	in Coasting Trade—Masters not required to have a Certificate - - - - -	335
Ditto	commanded by Masters whether holding any or what Certificate unknown -	103
Ditto	commanded by Foreigners not holding British Certificates - - - - - -	198
	Total - - -	1143

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TABLE IX.—*Wrecks and Casualties, distinguishing the Ships and Cargoes Insured and Uninsured:—*

Reported as Insured - - - - -	599 ships	... 84	cargoes
Reported as Uninsured - - - -	179 „	... 118	„
Unknown whether Insured or not -	365 „	... 741	„
In Ballast - - - - - - - - -	— „	... 200	„
Total - - -	1148 ships		

TABLE X.—*Wrecks and Casualties, excluding Collisions, which have involved total loss, distinguishing the cause of each loss:—*

Class I.—Arising from stress of weather:—Foundered 42; Driven on a lee shore 81; Parted anchors or cables 20; Dragged anchors 16; Loss of rudder 4; Loss of masts, yards and sails 11; Shifting of cargo or ballast 6; Missing stays 12; Failing to make harbour 3; Abandoned at sea through stress of weather 10.

Class II.—Arising from inattention, carelessness, or neglect:—Mistaking lights or bearings 10; Error in course or reckoning 7; Not heaving lead 22; Anchors not clear 1; Error or incompetency of Pilots 3; Intemperance 1; Want of seamanship 3; General negligence and want of Caution 19.

Class III.—Arising from defects in ships or equipments:—Foundered from unseaworthiness 29; Overladen 1; Local attraction of compasses 1; Defective compasses 2; Insufficiently manned 1.

Class IV.—Arising from various causes:—Capsized 2; Foggy weather 24; Want of lights or buoys on coasts or shoals 2; Want of Pilot 3; Strong currents 12; Spontaneous combustion 5; Ignorance of coast 3; Striking on sunken wreck 3; Error in judgment 4; Combination of causes 8; Steam Tugs—Want of power 1, and Carrying away tow-rope 3; Burned 2; Causes unknown 7.

Total in the Four Classes 384.

TABLE XI.—*Wrecks and Casualties, excluding Collisions, which have involved serious damage, distinguishing the cause of each accident:—*

Class I.—Arising from stress of weather:—Leaky 62; Driven on a lee shore 42; Parted anchors or cables 29; Dragged anchors 21; Loss of rudder 4; Loss of masts, yards, and sails 61; Shifting of cargo or ballast 7; Missing stays 17; Trying to make harbour 9; Derelict 12; Capsized 2.

Class II.—Arising from inattention, carelessness, or neglect:—Mistaking lights or bearings 16; Error in course or reckoning 5; Not heaving lead 18; Anchors not clear 1; Error or incompetency of Pilots 12; Intemperance 1; Improper stowage of cargo 1; Want of seamanship 3; General negligence and want of caution 29.

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Class III.—Arising from defects in ships or equipments:—Leaky from unseaworthiness 20; Overladen 2; Rotten or imperfect gear 5; Local attraction of compass 2; Defective compass 7; Defective charts 2.

Class IV.—Arising from various causes:—Pricked on anchor 3; Foggy weather 47; Want of lights or buoys on coasts or shoals 2; Want of Pilot 3; Strong currents 8; Spontaneous combustion 2; Ignorance of coast 3; Error in judgment 10; Plurality of causes 7; Steam Tugs—Want of power 2, and Carrying away tow-rope 2; Causes unknown 3. Total in the Four Classes 482.

TABLE XII.—*Wrecks and Casualties arising from Collisions, which have involved total loss, distinguishing the causes of the collisions:* Missing stays 1; Anchoring in foul berth 1; Want of sea room 1; Thick and foggy weather 3; Bad look-out 23; Neglecting to show light 5; Neglecting of Rule of the Road at sea 8; Error of Pilot 1; General negligence and want of caution 8; Cause unknown 2. Total 53.

TABLE XIII.—*Wrecks and Casualties arising from Collisions, not involving total loss, distinguishing the causes of the collisions:*—Breaking sheer and fouling 13; Missing stays 2; Anchoring in foul berth 2; Want of sea-room 4; Thick and foggy weather 18; Bad look-out 65; Neglecting to show light 13; Neglecting of Rule of the Road at sea 22; Error of Pilot 1; Want of seamanship 9; General negligence and want of caution 57; Error in judgment 4; Cause unknown 14. Total 224.

69 of these Collisions took place with steam-vessels.

TABLE XIV.—*Summary of Tables* X, XI, XII, and XIII.

	Collisions.		Casualties other than Collisions.		Total Casualties.	
	1856.	1857.	1856,	1857.	1856.	1857.
Ships totally lost	51	52	368	384	419	437
Ships damaged .	265	224	469	482	734	706
Total	316	277	837	866	1153	1143

TABLE XV.—*Wrecks and Casualties arising from Collision, distinguishing the Hour of the Day when each collision happened:*—It appears that 75 collisions occurred between 6 a.m. and 6 p.m.,—and 202 between 6 p.m. and 6 a.m.

TABLE XVI.—*Rocks and Sands on which Wrecks and Casualties*

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have happened, with the number which happened on each:—Abertay 2; Arklow Bank 2; Barber 2; Blyth Sands 1; Brake 2; Burbo Bank 1; Cardiff Sands 1; Corton 2; Dogger Bank 1; Dudgeon 5; Galloper 4; Goodwin 18; Gunfleet 5; Hasborough 4; Herd 10; Holm 10; Kentish Knock 3; Kish Bank 1; Long 18; Long Scar 3; Maplin 3; Middleton 8; Nash 3; Newcombe 2; Owers 2; Scroby 8; Sunk 3: Shipwash 5; Swin 1; Tetney 1; Whitburn Steel 1; Whiting 1; Woolpack 1.

TABLE XVII.—*Gives a List of the principal Wrecks and Casualties, distinguishing the Place in which they happened, and the number of Lives lost in each*:—From which it appears that 35 lives were lost in 5 collisions.

TABLE XVIII.—*Wrecks and Casualties for* 1857, *compared with the Five preceding years*:—

Description of Casualty.	Total number of Wrecks reported in the Years						Total number in Six Years.	Average.
	1852.	1853.	1854.	1855.	1856.	1857.		
Wrecks...	958	759	893	894	837	866	5,207	868
Casualties	57	73	94	247	316	277	1,064	177
Total	1,015	832	987	1,141	1,153	1,143	6,271	1,045

From this Table it will be seen that the Wrecks and Strandings reported in 1857 show—

A decrease of 9·6 per cent. as compared with 1852.
An increase of 14·1 per cent. as compared with 1853.
A decrease of 3·02 per cent. as compared with 1854.
A decrease of 3·02 per cent. as compared with 1855.
An increase of 3·47 per cent. as compared with 1856.

And that the Collisions reported in 1857 show—

An increase of 385·96 per cent. as compared with 1852.
An increase of 279·45 per cent. as compared with 1853.
An increase of 194·68 per cent. as compared with 1854.
An increase of 12·15 per cent. as compared with 1855.
A decrease of 12·34 per cent. as compared with 1856.

TABLE XXIX:—*Total Wrecks and Casualties in* 1857, *distinguishing between British and Foreign Ships, with the total number of Voyages of British and Foreign ships respectively, and the per centage of Casualties in each class as compared with the Voyages*:

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Number of Voyages :—	
British ships - - - - -	213,185
Foreign ships - - - - -	44,818
Total ships - - - - -	258,003
Number of Casualties :—	
British ships - - - - - -	930
Foreign ships - - - - - -	213
Total ships - - - - - - -	1143
Rate per cent. of Casualties upon Voyages :—	
British ships - - - -	1 in 229
Foreign ships - - - -	1 in 210

PART II contains a Statement of the Means adopted for saving Life, the Sums expended on account thereof, and the Number of Lives lost and saved :—

TABLE XX *relates to the Number and Stations of Life-boats*, from which it appears that the number of boats under the management of the National Life-boat Institution were 66, and under other management 73 :—Making a total of 141 Life-boats.

TABLE XXI, *relating to Rocket and Mortar Apparatus*, states that

The number of Stations in		England are	141
„	„	Ireland	34
„	„	Scotland	23
		Total - -	198

TABLE XXII :—The sum paid out of the Mercantile Marine Fund, towards saving life from shipwreck, amounted to £ 5020 14*s.* 3*d.*

TABLE XXIII *contains the Names of Persons to whom Rewards have been granted for distinguished and gallant services in saving Life from Shipwreck, during* 1857.

TABLE XXIV.—*Number of Lives saved from Shipwreck on the Coasts of the United Kingdom, during* 1857, *distinguishing the means by which they were saved* :—

By Life-boats - - - - - - - - - - -	398
By Luggers, Coast-Guards boats, and small craft - - - - - - - - - - -	512
By Ships and Steam-boats - - - - -	507
By assistance from shore with Rocket and Mortar Apparatus, Ropes, &c. -	243
By individual exertion - - - - - - -	8
Total - - - -	1668

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TABLE XXV :—*Number of Lives Lost in* 1857 :—It appears that of the total number of persons on board ships to which casualties have happened on the coasts of the United Kingdom, the lives of 2206 were imperilled, of which number 532 or 24·11 per cent. were lost. The total number of lives reported as having been lost during the last six years were :—

1852	1853	1854	1855	1856	1857	Total	Average
920	689	1549	469	521	532	4680	780

It will be perceived from Part II that the means for saving life have received considerable attention and support. There are now stationed on the coasts of the United Kingdom 66 lifeboats of the "Royal National Lifeboat Institution," the whole of the coxswains and crews being exercised and maintained at the cost of the Board of Trade. These 66 are exclusive of private and corporate lifeboats. £1,049 7s. 5d. was expended by the Board of Trade last year on lifeboat service alone. A new arrangement for giving increased efficiency to this branch of the service has been concluded with the Royal Lifeboat Institution, and £827 15s. 4d. has been paid to assist them in placing new boats in situations where they were much required. The rocket and mortar apparatus transferred to the Board of Trade by the Customs has been put in a state of efficiency. The method of landing persons from ships in distress by the rocket and mortar lines has been much simplified; a uniform plan has been devised and adopted, and directions for the use of the apparatus have been circulated throughout the merchant services, both English and Foreign. The total sum expended in providing means for salvage of life on the coasts, and as rewards for meritorious services on that behalf, last year, was £5,020 14s. 3d. inclusive of the expense of lifeboats, rockets, and mortars,—but exclusive of the sum paid for chronometers, telescopes, and medals presented for individual acts of courage and humanity.

PART III gives the particulars of 31 special Inquries into Casualties, ordered by the Board of Trade during 1857, most of which have appeared at different times, in the Magazine.

It will be seen from the above Abstract that the Casualties on the East coast, during 1857, are 94 in advance of those which occurred on that coast in the preceding year,—or 52·5 per cent.

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upon the *whole* number of casualties on the entire coasts,—a very large proportion. This may, in some measure, no doubt be attributable to the great number of vessels passing and repassing along that coast; but the chief causes appear to be—the difficult and intricate navigation incidental to the rocks and sands with which that coast abounds, the want of harbours of refuge, and the dangerous system of "follow the leader" constantly practiced by colliers and coasters, whereby reference to charts, the use of the lead, and the necessity for laying down courses, are neglected.

Of the Collisions, 131 are stated to have arisen from the "usual causes,"—*neglect to show a light, a bad look-out,* and *misapplication or neglect of the Rule of the Road at Sea;*—and of the Wrecks and Casualties (excluding Collisions) it appears that no less than 158 are attributable to *not heaving the lead, neglect or inattention, and defects in ships or their equipments.*

The Wreck experience of the year is pronounced to be on the whole favourable,—we cannot look on it in this light, as with proper *harbours of refuge, more caution,* and *less defects,* nearly one half of the casualties are such as would not have occurred.

LIVERPOOL MERCANTILE MARINE ASSOCIATION.

We had occasion last month to give the particulars of the Deputation of the Liverpool Mercantile Marine Association to the Board of Trade, we have have now to lay before our readers the Report on the first Annual Meeting of the same Association, held at their Rooms in Water Street, on the 9th of April. Capt. Samuel Reed in the Chair. We have great pleasure in publishing this Report, evincing, as it does, great earnestness on the part of the members, and there is no doubt they are proceeding in a direction which it would be well for the merchant officers in other large seaports to follow. The value of such an Institution as that in Liverpool, well supported, and tending as it must to elevate and improve the position and education, and conducing to the comfort and convenience of Commanders, officers, and seamen, will be appreciated more and more by its members every year, and must ultimately tend to the most beneficial results—morally, socially, and politically.

REPORT OF THE ANNUAL MEETING OF THE LIVERPOOL MERCANTILE MARINE ASSOCIATION.

The Council has now the pleasure, at the termination of the first year of the existence of the Association, to submit to the members a report of its

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proceedings and a statement of the progress which has during the year been made in carrying out the objects for which the Association was formed.

It will be remembered by those who took an early interest in the Association, that its origin was owing to a feeling of dissatisfaction existing in the service with regard to the tribunal for the investigation into the causes of wrecks and casualties to British Merchant ships—although this is an important subject and one, throughout its labours, that has engaged the serious attention of the Council, it was felt that the necessity of union thus given, afforded an opportunity to the service and those interested in it to make an effort to elevate to its proper position, as a profession, the art and science of seamanship.

The objects of the Association were, therefore, extended so as to embrace not merely the procuring a revision of the portions of the Merchant Shipping Act, which have been alluded to, but the doing of all such other things as would benefit, elevate, and improve the position, education, and comfort of the commanders, officers, and seamen, of this great maritime nation.

In order to strengthen and to increase the weight and influence of the Association, the Council has sought, and with much and gratifying success, to ally with it the leading shipowners and merchants of the port of Liverpool. The members for the borough, with Mr. W. Brown, M.P., and Mr. Ralph Brocklebank, have kindly testified their interest in the welfare of the Association, by allowing their names to be placed as honorary members of the Council, and by giving liberal donations to its funds. The meetings which have been held, have been presided over by Mr. Ralph Brocklebank, and his Worship the Mayor, and have been attended, and the proceedings at them approved, by the most eminent merchants and shipowners of the port.

In accordance with the resolutions at the first public meeting of the Association, petitions were presented to both houses of parliament to amend portions of the Shipping Act. From the necessarily late period of the session when those petitions were presented, it was not to be expected that any measure could be then passed to remedy the acts; Mr. Horsfall, however, has brought the subject most fully and fairly before the House of Commons, for an inquiry into the constitution of the Board of Trade; and the Council believes that although the result was fruitless, the ultimate result has been most profitable, by calling the attention of parliament and of statesmen to the grievances under which the service labours, and has prepared the way towards the act being fairly considered, and proper amendments made in it.

One of the greatest wants in the port of Liverpool was felt by the Council to be the absence of any Institution to which nautical men could resort to obtain information, to pass their time, and to transact their business. In June last, the number of members had increased so much that the Council felt justified in engaging and fitting up the present offices, for the purposes of a newsroom and reading-room. It has now much happiness in reporting that this step has met with complete success. Since the rooms were opened

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they have been in constant use; the number of members has steadily increased, and the Council believes a great want has been supplied, especially to the non-resident members of the service.

The Council desires to mention with pleasure, that since the rooms were opened they have not only received from the members some valuable presents, but that the Admiralty has given an earnest of its approval of what has been done by presenting to the Association a set of charts. Lieut. Maury, of the United States, has also presented to the Association a complete set of his wind and current charts, and Capt. Beecher, of the Hydrographic-office, has also given the published volumes of the *Nautical Magazine*, and has intimated it to be his intention to send the forthcoming numbers.

It may be well here also to mention that the Council has placed in the rooms, books for receiving the names of masters, officers, and engineers desirous to obtain appointments, and that these have to a very considerable extent been used by the shipowners of the port.

In connexion with the London, Southampton, and other Associations, the Council was anxious that a joint application should be made to the Queen in Council to grant a charter of incorporation to the mercantile marine service, to enable the profession as a corporation to take measures—

1.—To elevate the social position of the officers and men belonging to the Mercantile Marine, by taking means for their superior education, and the advancement of ability and character, and the better discipline of the merchant service.

2.—To reward officers and men of the Mercantile Marine for long and able service, for brilliant acts of seamanship, for saving life or cargo, for discoveries, inventions, or other contributions to the service.

3.—To provide refuges for aged, sick, and worn-out officers of the Mercantile Marine.

4.—To establish schools, afloat and on shore, for the education and training of boys and men for the service.

5.—To establish institutions at the principal seaports, in furtherance of the general plan, and for the advantage of seamen; and to publish, or assist in the publication, of any books, maps, charts, plans, or other works, for the use of the Mercantile Marine.

6.—To raise funds for the carrying out of these objects.

And generally to do anything, although not falling within the list of the above duties, that may conduce to the improvement or social elevation of the Merchant Shipping Service, or to the instruction, benefit, or happiness of the officers or men engaged in that service.

The Council regrets to be obliged to report any difference of opinion as to the incorporation. A difference, however, does exist, although it is a small one, respecting the constitution of the council of the incorporation. This the London Association at first desired should be open to any one who would subscribe to the funds, but they afterwards proposed that the council should be confined entirely to shipowners and members of the service. Your Council has felt that any charter or incorporation in connection with the service, should be one distinctly *for the service*; at the same time it anxiously desires, as is the case with this Association, to have connected with it not only

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shipowners, but merchants and every one connected with the service. It is proposed to effect this by the corporation being composed of members who must be or have been, seamen, and "associates," who shall be shipowners and those interested in the service. The election of the Council will rest with the "members," but any member or associate shall be eligible to be elected. It is trusted that this difference may speedily be arranged: and the Council deeply regrets that the London Association should in any way isolate itself, and differ from the views of this Association.

In connection with this subject, the Council may mention that it felt it to be its duty to oppose an application on the part of the Shipwrecked Fishermen and Mariner's Society, to have appropriated to them a portion of the Mercantile Marine Fund, for the purpose of erecting a hospital on the banks of the Thames, for sick, worn-out, and disabled officers and seamen; the opposition was successful, and the Council considers that the then Government was not unwilling to have entertained, had it remained in office, a proposition on the subject of the application of the fund for kindred purposes, provided it were put under the supervision of the service.

Availing itself of the recess, the Council went minutely through such of the clauses of the Merchant Shipping Act as affect the service; and drew up a memorial to the Board of Trade, detailing the alterations which it was considered ought to be made, and urging upon the Government the justice of giving to the service a share in its government, by a representation upon the Local Marine Boards, and of making an alteration in the tribunals, in the cases of wrecks and casualties, and the necessity of making a provision for the support of sick, worn-out, and disabled officers and seamen, and for the education and training of those entering, or in the service.

An influential deputation waited upon the President of the Board of Trade, to present and support the memorial; and the Council feels that it has not only been promised serious consideration, but the reply of the President was an admission of the importance and necessity of some action being taken upon the subject.

Another matter to which the Council thinks it right to call the attention of the members, is the relief fund for Mrs. Rogers and her family, although, in this matter, the Council did not act as a body, but as individuals. From the funds raised, Mrs. Rogers has been placed in a comfortable position, and enabled to earn a livelihood. The balance of the fund is in the Royal Bank, waiting the nomination of trustees; the accounts have been made up, audited, and published.

To further the objects in view, the Council has taken steps to connect with it the ports of Dublin, Cork, Belfast, Fleetwood, and Whitehaven, in each of which a resident Secretary has been appointed, and Committees are being organised.

In concluding its report, the Council assures the members that it has not only bestowed its best efforts to further and protect their interests, but that, in all it has done, and especially in reference to the Merchant Shipping Act, it has confined itself strictly to the matters affecting the service.

The thanks of the Association are eminently due to the members of the borough, to Mr. Ralph Brocklebank, and to his worship the Mayor, for the

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kind interest and attention they have taken in and given towards the promotion and interests of the Association, and also to Sir Hugh M'Calmont Cairns, M.P. the Solicitor-General, for his friendly letter of advice upon the subject of the memorial, which was submitted to him for his opinion.

The expenses of the Association have necessarily been, during the first year, somewhat large; but the Council trusts that the expenditure will be considered not only to have been so applied, as to establish the Association upon a firm and proper basis, but will remember that a very large portion is represented by the fittings of the rooms, books, maps, charts, &c.

The labours of the Association are not yet done; to maintain the position gained, to make another step in advance, much and constant energy must be shown, not merely by the Council, but by the members individually; and it is sincerely hoped, and will be the best reward of the Council for its past year's work, to see the Association continue to flourish and progress, until it becomes as it ought, in this the greatest port of the world, a substantial, permanent, and efficient Institution.

BENJ. J. THOMSON, *Secretary.*

30, Water Street, Liverpool, *April* 8th, 1858.

THE UNITED STATES COAST SURVEY.

MOST persons must have heard from time to time of that great national scientific undertaking, the United States Coast Survey. As it is a subject directly connected with Navigation, and as many of our readers may not be aware of the real magnitude and importance of the work—of the number of sciences pressed into the service—of the character of the operations to make such a work perfect—and of the advantages that must accrue from such a noble and gigantic undertaking, conducted as it is by some of their ablest scientific men, we give the following general sketch of the plan, objects, and result of the Survey, which reflects the greatest honor on the national spirit that originated it. The sketch is taken from the *American Journal of Science and Art*, and will be interspersed with such notes and remarks as appear necessary.

The Survey of a Coast so extensive as that of the United States is, even in its general features, a work of immense extent. That coast stretches from New Brunswick to Mexico, and from the Straits of Fuca to Old California; upon the Atlantic and Gulf from the 24th to the 44th parallel; upon the Pacific from the 42nd to the 50th. Within that range of more than 5000 miles, it embraces every geographical peculiarity. Innumerable islands, bays, capes and headlands line the long reach of shore. Sand-banks hundreds of miles in length, enclosing shallow half-inland sounds, and bays stretching far into the interior, like

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Norwegian fiords, are among its most striking features. The Coast Survey must accurately locate every prominent point, map out the bottom of every bay and harbour, fix the bearings of every reef and shoal, trace the course of every current, deduce from long continued observations the laws of the tides, and in short, observe and measure every peculiarity in the physical geography of the coast, which the most refined science, the most delicate methods of observation, and the most perfect instrumental means can measure or detect.

After a preliminary reconnoissance, the Survey begins with the measurement of a base, that is to say, with the accurate determination of the length of a line upon the earth's surface, the two extremities of which shall serve as starting points. Setting out from these two initial points, the survey proceeds by great steps of thirty or forty miles, till the whole coast is covered with a network of large triangles, constituting what is termed the primary triangulation. The angles only of these triangles are measured, the sides being successively calculated by the aid of the angles and base. The accurate measurement of this line involves the most delicate instrumental methods. The expansions, inclinations, and flexures of the measuring bars, and the contacts of their extremities must be observed with exquisite nicety. Here, at the very first step in the work, the science of physics is called upon for its indispensable aid, and the reflecting pyrometer measures the expansions of the bars with an accuracy which is almost without limit. Delicate levels give the corrections for the inclinations and flexures. while the contact level determines the contacts of the successive bars. To such a degree of perfection have the measurements been brought, that the probable error in determining the length of a base five miles in length, does not, under favourable circumstances, exceed a few tenths of an inch. The base line being measured, the triangulation begins. Signals, at distances from ten to twenty miles from either end of the base, are observed in succession, and their angular distances determined with all the precision which modern mechanism has given the theodolite. The sides of the great triangles thus obtained being calculated, the signals form fixed points for new angular measurements, and so the triangulation stretches from hill to hill, till the prominent points of the entire coast are determined. The signals themselves are of no small interest. Bright tin cones mounted upon poles are often used, and reflect to a distance a brilliant line of solar light. But of all signals, the heliotrope—a movable mirror, placed so as to be directed by a telescope—is the most perfect. With this instrument, the sun's rays have been reflected so as to be distinctly seen with a telescope at the distance of more than one hundred thousand yards. It is easy to see that, as the triangulation extends, the small errors, inseparable from every physical measurement, may accumulate, so that

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the positions of the stations most remote from the base line may be incorrectly determined. Two methods are adopted to guard against errors of this kind. A subsidiary base line may be measured near the terminal signals of the primary triangulation, and from the extremities of this we may work backwards, so as to check the results of the first series of observations and calculations of distances. The geographical positions of the principal stations may themselves be determined by accurate astronomical observations, assigning their exact latitudes and longitudes, to check the calculated positions. Both these methods have been brought almost to perfection, but the latter has been especially fertile in new and beautiful results.

It is easy to see that while the bases and triangles give distances, the observations of latitude and the azimuths give differences of longitude, by the aid of spheroidal formulas, a central longitude having been once determined. The differences of longitude are, in their turn, checked by the telegraph operations, to which we shall presently allude.

The base, which serves as the commencement of the primary triangulation for the eastern and middle States, lies within the state of Massachusetts, a little to the north of Rhode Island. Its length is over ten miles, and its direction nearly north-east and south-west; it was measured in 1845. Surveys for a verification base have been made in the north-eastern part of the state of Maine, on Epping Plains. Since the commencement of the survey, not less than nine primary and thirty-five secondary bases have been measured, making a total length of about 135 miles.

As the different stations of the primary triangulation are at different heights, it is necessary to measure vertical as well as horizontal angles, and finally, in consequence of the spheroidal figure of the earth, to reduce the plane triangles, which are the direct results of the measurements, to spheroidal triangles, at the level of the sea. In this manner, after immense labour, both of observation and of calculation, the positions of the primary stations are at length fixed, and these now serve as starting points for the secondary triangulation, which determines the general outline of the coast in detail, and the positions of reefs, rocks, and islands. The triangles observed are now smaller, but very much more numerous, and the labour of observation and reduction even greater than before. Then comes the topography of the coast,—the work at every successive step running more and more into detail. The coast line is now traced and laid down in charts of elaborate minuteness nnd finish. Harbours are surveyed and mapped out by innumerable soundings; the exact character and value of each being determined. The nature of the bottom with reference to anchorage, the depth and direction of channels, currents, tides and prevailing winds, the proper position of lighthouses, buoys and fog-bells, all form subjects of special and mi-

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nute attention. In this manner the entire coast from Mt. Desert Island to Cape Fear has been almost completely surveyed, and that portion of the sea-coast may be regarded as nearly finished. But besides the bays, harbours, and sounds of the coast, the rivers receive their share of attention,—small triangulations being carried up to the head of tide waters, based upon one of the sides of the larger work. In this manner the river shores are accurately mapped, while careful soundings determine the bars and channels. The mouths of the larger rivers offer special subjects of examination of the highest interest and importance. We refer to the changes in the depth and position of the channels produced by the effects of currents. The characteristics of the delta of the Mississippi, and the enormous quantities of matter annually brought down by the current, are too familiar to require notice in this place, but the changes in the entrance to the harbour of New York, have not until very recently attracted attention to the same degree.

The extension of docks and piers into the North and East rivers, and the amount of new made land, excited such serious alarm in the mercantile community, that a Board of Harbour Commissioners was appointed in the year 1855, to consider the whole subject, and devise means for averting the impending danger.

(To be continued.)

MUTINY AND MURDER AT SEA.

The *Sydney Morning Herald* contains the following account of a mutiny and murder on board the *Junior*, an American whaling vessel. It says, that from the evidence taken it is one of the most extraordinary on record:—

"There have been many acts of mutiny and piracy at sea, which have been attended with greater bloodshed, but few with so many peculiarities. The original mutineers were but a small section of the crew—in fact, only five men out of 30. The names of the five mutineers were Cyrus Plumer, John Hall, Richard Cartha, Cornelius Burns, and William Herbert. The rising was during the night which followed last Christmas day, but the five confederates had armed themselves and acted in concert, while the Captain and officers, against whom they directed their attacks, were wholly unprepared. The first intention, according to the evidence, would seem to have been that all the officers should be killed, yet only the Captain and third mate perished. The second mate having escaped the first crush, his life was spared.

"The chief officer escaped to the hold badly wounded indeed, but without mortal hurt, and remained there five days before he was discovered. By

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this time the men's passions were cooled, and he also was spared, although he seems to have owed his life, in a great measure, to the intervention of the ringleader, Plumer. The revolted seamen required his services, too, in order to navigate the ship to the Australian coast, which they were desirous of reaching.

"The conspiracy would seem to have originated with the five men alone, and before leaving the ship, one of them, in the name and presence of the rest, made an entry in the log, declaratory of their sole guilt and responsibility. According to the evidence, however, there was, on the part of others of the crew, a complicity after the fact, amounting not only to a moral, but to a legal participation in the offences committed by the first mutineers. Thus, at the orders of Plumer, others of the crew stood by with arms in their hands, ready to kill the chief officer if he showed himself on deck, and men so circumstanced as were Plumer and his associates, would scarcely put arms into the hands of any man whom they did not feel sure they could trust. There seems no evidence, however, to implicate more than the ten men who finally left the *Junior* within 20 miles of the Australian coast, to which point the chief mate brought them, after he had been found in the hold, and had agreed, in order to save his life, to take the ship where they directed him.

"They left the ship in the vicinity of Cape Howe, in two whaleboats, taking with them everything of value which they could lay their hands upon. They attempted to penetrate the interior from Ninety-mile Beach, but found it more difficult than they expected, as this is a part where, from a scarcity of water, even the aborigines find it scarcely possible to travel. Six of them, however, forming the crew of one boat, have persevered in the attempt, and it is thought most likely they have perished. If not, they can scarcely escape capture. The other four went to Twofold Bay, where they gave themselves out as Americans on a voyage from Melbourne to Sydney; but the singularity of such a voyage being taken in a whaleboat, their arms, and the nature and value of the property they had with them, excited suspicions. A force was gathered together and they were arrested, but as there was no tangible evidence against them, they were discharged again, although the boat was detained. They made themselves, however, as far as outward appearances went, pretty comfortable, wearing fine clothes, and living a reckless life. Plumer, who called himself Capt. Wilson, became quite a ladies' man, and was even, it is said, upon the eve of marriage when he was arrested.

"When the men left the ship they imposed an oath upon the chief mate, to take the ship on to New Zealand. Had he done this, they would have had a considerable time before them, to provide for their own safety. But, of course, he regarded the oath thus forced upon him as imposing no moral obligation, and he determined upon making towards the nearest port at which he could get assistance for the ship, and invoke the arm of justice to pursue the mutineers. He at first shaped his course towards Hobart Town, but meeting with an intercolonial trader, he was advised to bear up for Sydney, and did so. The excitement here, on hearing of this mutiny, as well as the public sympathy with its victims, was very great. Soon after-

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wards word was brought of some of the men having been seen at Gabo Island, and the steamer *Illawarra* was at once dispatched in search of them, with an armed party of police. The steamer followed the men to Twofold Bay, but 'ere her arrival, an account of the mutiny had been received through another channel, and the local authorities had secured three of them. The fourth (Cartha) escaped into the bush, but he has since been captured. This was, apparently, the most desperate man of the party. After his apprehension, he managed to conceal a small file from the searching eyes of the police, and had nearly severed his irons ere this was discovered.

" The question as to how these men are to be dealt with, is one of some difficulty. A pirate may, according to international law, be tried at any place where he is captured. He is held to be the natural foe of all nations, and, consequently, liable to be dealt with by any of them. But we doubt whether the crime with which these men are charged is such an act of piracy, according to the international sense of the term, as will give the Courts here a jurisdiction. We do not mean that it is a less grave offence in any respect, but that having been committed on board a foreign ship, on the high seas, by men owing local allegiance to the flag under which she sailed, we fear it is one with which the Courts of the foreign country alone can deal; therefore that these men, with the witnesses against them, will have to be sent to America. The point, however, is one which will certainly be raised and decided.

" The following is a list of the officers and men belonging to the *Junior*. The names italicized are the prisoners apprehended, those with an asterisk are at large:—

" Capt. Archibald Mellon, (deceased); William Nelson Provost, first officer, (wounded); Henry Lord, second officer, (wounded); John Smith, third officer, (deceased); Hugh Duff, steward; *Cyrus Plumer*, (age 24); Joseph Venus; *William Sampson (26); *Joseph Brookes (21); *Adam Canel (21); Herman Graff, cooper; *Jacob Rike*, carpenter (24); John Enos; Charles Harrison; John Lewis; *William Herbert (21); David Carter; Antoni Ludwig; Charles F. Fifield; William H. Marlatt; Henry Collins; *Charles H. Stanley* (23); J. W. Hutchins; Henry Mason; Charles R. Mansfield; *Cornelius Burns (22); Frank Stafford; *William H. Cartha* (21); Owen Duffy; Henry Lynch; Samuel Howard; *William Payne (22) shipped as John Hall; Manoel Lavrador (a lad.)

" The first intelligence of this tragedy was brought to Sydney on Saturday, the 9th of January, by Capt. Haddon, of the *Lochiel*, from London, who stated that 'on the 7th of January, when off Cape Howe, he sighted a ship in shore with a signal of distress flying, and immediately bore down for her, when she hailed, and stated that part of the crew had mutinied, and killed the captain and third officer; that on boarding her the vessel proved to be the *Junior*, of New Bedford, United States, on a whaling voyage, and six months out; that on Christmas night the crew, without any apparent motive, murdered the Captain and third officer by shooting them with a whale-gun, at the same time badly wounding the chief and second officers; they afterwards cut the third officer's head off with a spade. The chief mate, although in a frightful state from the effects of his wounds, managed to gain

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the hold, and conceal himself for five days—when, on being discovered by the mutinous portion of the crew, they dragged him out, but promised to spare his life if he would take the vessel to Cape Howe, which he did. They were at that time off the coast of New Zealand; on the 2nd, Cape Howe being in sight, ten of the crew lowered two boats, and, after taking as much as the boats would carry, of slops, &c. left the ship and pulled for land, distant about 20 miles. Previous to leaving the vessel they smashed the chronometer, and, having obtained all the fire-arms on board, cut the barrels of some double-barrelled guns, to render them more portable. The chief officer is under the impression that the ringleader is an Englishman, who has been in the colony before. Three days after the massacre the mutineers hoisted the bodies on deck, and having fastened weights to the legs, threw them overboard. The *Lochiel* not having a surgeon on board, could render no assistance to the wounded men, but kept company with the *Junior* until 8 p.m. on the 8th inst. when she was lost sight of,—Sydney Light at that time N.N.W. distant 20 miles. The vessel was doing her best to make for Sydney.'

" The *Junior* arrived the next day. (Sunday, the 10th of January.) The information then received from the chief officer correspond in every particulars with the above statement made by the captain of the *Lochiel*."

Further details extracted from the Log-book are then given, and an account of the examination of the mutineers before the Police Magistrates. This examination commenced on the 1st of February, and lasted several days. The result is not stated.

NAUTICAL NOTES.

Admiralty Lists of Lights:—We occasionally hear the remark that no public *notice* has been given *to mariners* of the establishment of new Lights on some particular coast, nor of a change in old Lights,—now when a ship leaves our shores before the *official* report on the subject has been received here, the Captain on reaching a foreign port and finding lights he did not anticipate, may naturally conclude there has been negligence somewhere—this negligence we are enabled to state, is not on the part of the authorities at home, since the necessary notices are issued from the Hydrographic Office as soon as *correct particulars* are known, which is as it should be, for non-official notices, or such as are published without a good local knowledge are very frequently erroneous and consequently more liable to lead a ship into, than out of, danger. We must call the attention of Captains to the more general use of the Admiralty *Lists of Lights* which undergo correction and revision twice a year, and vary in price from 3*d.* to 1*s.*; they include the following:—*Africa; Coasts and Lakes of British North America; United States;*

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South America, E. and W. Coasts, and W. Coast of North America; Belgian, Danish, Hanoverian, Netherland, Norwegian, Prussian, Russian and Swedish; British; East Indies; French, Portuguese and Spanish; Mediterranean, Black, and Azov Seas; West Indies and adjacent Coasts..

Despatch from H.M's. Consul at Fernando Po, adverting to **Infractions of the Mooring Regulations for the Bonny River,** committed by certain vessels trading thereto:—

Clarence, Fernando Po, *January* 22nd, 1858.

Sir,— I have the honour to inform the Lords of the Committee of Privy Council for Trade, that on the occasion of a recent visit to the river Bonny in the early part of this month, I observed that there were infractions of the 7th and 8th additional articles ratified by me on the 7th April, 1856, and sanctioned by their lordships, with reference to the prescribed distances of mooring ships from one another to obviate the recurrence of such a disastrous incident as that which took place in the early part of the fore-mentioned year in the burning of the ships *Martha* and *Saracen.*

The ships *Sunshine* and *St. Andrew* were anchored out of the prescribed lines. The stern of the *St. Andrew* was in a position of seventy fathoms, one foot, from the *Mississippi's* bow, and the stern of the *Sunshine* was in a position of only fifty-six fathoms, four feet, from the bow of the hulk *Ambrosine.* I deemed it my duty to observe to the supercargoes that it was quite useless to ask me to sanction regulations for the safety of the property which they had in their charge, if they did not attend more faithfully to them. I assured them moreover of my belief that their carelessness in these matters would prove a very strong cause of affecting their merchants' interests in relation to insurance, and recommended their harbour master, who is the chairman of the Equity Court for the time being, to re-arrange the position of those vessels, such arrangement of course not being possible without the concurrence of the whole body of supercargoes. They unanimously agreed to set about the work in the following week.

I am, &c. &c.

THOS. J. HUTCHINSON, H.B.M's. Consul.

The Secretary, Board of Trade.

The Australian Postal Service:—A return showing the time occupied by the Australian mail steamers in their voyages out and home has been printed, on the motion of Mr. Macartney, M.P. In the Suez and Sydney service, there are five steamers of 1,538 to 2,754 tons, and of 300 to 750 horse-power. Two—the *Emeu* and the *Simla*—are chartered. To the *Oneida* new machinery is being fitted; and the *Tasmania* is preparing

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for sea (not yet surveyed by the Admiralty). Last year it appears that the *Emeu* was four days behind time on the voyage out (penalty 500*l.*) The *Etna* and *European* (which divided the voyage between Southampton and Alexandria, and Suez and Sydney,) so managed as to leave a default of nearly nine days, for which 1,800*l.* penalty was levied. The *Tamar* and *Columbian* were, in the same way, seven days in arrear, on the whole of the outward voyage, and 1,400*l* was the fine imposed. In the joint voyage of the *Jura* and *Sinda* 1½ day was saved, and a premium of 30*l.* was paid; on the home voyages from Sydney, there were two failures; in one, where 11 days were lost, 3,300*l.* was imposed; and in another, although the voyage was performed two days within the time, 200*l.* was abated from the contract as penalty, in consequence of a delay at Alexandria. In two other cases there was an excess of five days, and one day. The Royal Mail Company apprised the Admiralty on the 14th of January last, that they had accepted tenders for two paddle-wheel steamers of iron, of 3,090 tons, and 800 horse-power; and for a third steamer of the same power and size, all of which they hoped to have ready for sea in 20 months from the date of the contract with the Government; these steamers are for the West India Transatlantic mail service. One iron steamer of 1,000 tons and 250 horse-power is to be built, by the same company for the mail service, between Rio de Janeiro, and the River Plate. The contract of the Royal Mail Company, has been extended to the 1st of January, 1864, and the acceleration of the Brazil route, is to commence on the 9th of May ensuing.

Workington Harbour, Cumberland, W. Coast, of England;—*Change of Channel*:—All vessels entering or leaving the Harbour of Workingtin, after the 1st of May next, must take the new West Channel, as the present, or North Channel, will be closed. [For particulars see Mer. Mar. Mag. p. 159, in the "List of Lights and Buoys."

PRESERVATION OF LIFE FROM SHIPWRECK.

A MEETING of the Royal National Life-boat Institution, was held at the house, John-street, Adelphi, on the 1st of April, Captain Lambert Perrott in the chair.

The Secretary (Mr. Lewis) having read the minutes of the previous meeting, stated that the sum of £112. 5*s.* had lately been distributed to various persons, for energetic and gallant services, in rescuing life on the coast during recent gales.

The thanks of the Institution, inscribed on vellum, were also presented to Mr. John Brook, of the Grange Farm, Isle of Wight,

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in testimony of his highly meritorious services in assisting, by wading into the surf, to rescue fifteen persons, from the brig Tomeraria, of Portugal, which, during a gale of wind, was wrecked off Atherfield.

It was reported that the society's life-boat stationed at Walmer, had recently put off to a ship that was seen on the Goodwin-sands. It was found, however, on approaching the vessel, that no one was on board. This is another lamentable illustration of the absolute necessity for one of her Majesty's small steamers, being constantly kept, with her fires banked up, in the Downs, with one or two life-boats attached to her. The steamer might also be ready to tow life-boats out to the vicinity of the Goodwin. We have often urged the adoption of some such plan, and the National Life-boat Institution, seconded by the large mercantile and other bodies of the City, memorialised the late Board of Admiralty on this important national subject, but their appeal was not regarded. We trust that the subject, which is perfectly practicable, will again be revived, and that it will receive more attention from the present Board than the late one. Some hundreds of our fellow creatures every year perish on these dangerous outlying sands, before any human aid can possibly reach them from the shore, as in the case above recorded, and it is full time that something should be done, to lessen this dreadful waste of human life, and the incalculable misery resulting from it amongst the widows and orphans of the drowned.

The Portmadoc life-boat, which belongs to the Institution, was said to have rendered important services to the steamer Plinlinnon, which was in a dangerous position off Portmadoc. The life-boat remained by the steamer a day and night, at the risk of being stove to pieces. Ultimately, however, the steamer was got off, and proceeded on her voyage. Agreeably to the strict orders of the Institution, its life-boats are never to encourage crews to leave unnecessarily their ships, and thus it not unfrequently happens that through the instrumentality of its life-boats valuable ships and cargoes are saved from destruction.

During the past month the society had sent new life-boats to Palling, in Norfolk, Ardmore, in Ireland, and to Dover, and life-boats are about to be sent to Hastings and Brighton. It was also stated that Messrs. Forrest, the life-boat builders, were now building many boats on the plan of those adopted by the Institution, for several of our Colonial Governments, and that the boats had recently been despatched by them to Australia. The Institution furnishes working drawings on a large scale, of its life-boats, for distribution in our Colonies, and in foreign countries.

The benevolent donor of the cost of a life-boat to the Institution, had requested that it might be named the Havelock. As a means of rescue from danger, the name appeared to be appropriate, and he was desirous that the name of that Christian

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soldier should be cherished on the Scotch coast, where the life-boat is to be placed.

Upwards of £1,300 were ordered to be paid for various life-boats, and transporting carriages.

Admiral Fitzroy was elected a member of the committee of management.

REWARDS AND TESTIMONIALS.

The following tribute was paid by the passengers on board the P. & O. C's. steam ship *Colombo*, to **Capt. Field**, of that vessel, just previously to her last arrival at Southampton :—

"Ship *Colombo*, at Sea, March 26th.

"Dear Captain Field,—We take this opportunity before the dispersion of our party, to express how much we feel indebted to you, for the pleasant and prosperous manner in which our homeward voyage has been accomplished. We assure you that in thus addressing you we are influenced by a sincere sense of the unusual kindness and attention, which we have throughout experienced from yourself, and the officers under your command. We beg that you will convey to all the officers, our thanks and wishes for their future prosperity and success, and, with the like good wishes for yourself, we subscribe ourselves

"Your much obliged friends,

"Julia Inglis.	"Margaret O'Shaughnessey.
"Rebecca Apthorpe.	"Isabella Fulton.
"Julia J. Harrison.	"Lizzie Ruggles.
"Jane B. Pelly.	"D. E. Pelly.
"Lizzie Bruere.	"Clara Alice Norman.
"M. Cowie.	And the Gentlemen."

The passengers by the ship *Antipodes*, while "expressing their gratitude, to **Capt. George Grey**, for his unwearied attention, kindness, and gentleman-like demeanour" to all board, have presented him with a Gold Watch, "as a small token of their esteem and friendly feeling." April 7th 1858.

The *Rose* of Sunderland, when on a voyage to Odessa in October last, was overtaken with a severe storm in the Sea of Marmora, struck on the Island of Coutley, and was exposed to great danger. By perseverance she was got clear of the island and proceeded to Odessa, where she received some repairs, and the ship and cargo were brought safe back to her destined port. In consideration of the exertions of **Capt. Stothard**, of Sunderland, by whom the ship was commanded, under the peculiar difficulties in which he was placed, the Underwriters have been pleased to testify their approbation, by presenting him with a valuable

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Gold Watch, bearing the following inscription:—"Presented by the Members of the Newcastle General A 1 Insurance Association, to Capt. James Stothard for meritorious conduct on board the *Rose*, 1857."

Capt. Charles H. Sivell, of the steam-ship *Cloda*, has been presented with a handsome Pillar Sextant, bearing the following inscription:—"Presented to Capt. Charles Henry Sivell, by the Directors of the Canadian Steam Navigation Company, as a mark of their regard for his services during a period of four years. Liverpool, March 22, 1858."

The Board of Trade have presented to **Thomas Osmer, Esq.** R.N. chief officer of the Coast-guard Station, Swanage, a Silver Medal; to **Abel Lake,** commissioned boatman, £2, and in addition a Silver Medal, for jumping out of the boat and saving the life of his fellow-boatman Andrew Hill, who had been washed overboard by a heavy sea; to **Andrew Hill, Henry Stainer,** and **Walter Prowter,** conmissioned boatmen, **Arthur Whiter,** district carpenter, **G. Blunden,** and **L. Lawrence,** boatmen, the sum of £2 each, for gallantry in putting off in their boat and saving the crew of the smack *Trial*, off Swanage, during a heavy gale on the 5th of April.

The Board of Trade has presented to **Capt. Andreasen,** of the ship *Enigheden*, of Denmark, a Telescope, for saving the crew of the *Albion*, of London, which vessel was discovered in a sinking state at sea in November 1856.

CERTIFICATE SUSPENDED.

John Anderson Christie, master of the *Elizabeth*, of Liverpool, was indicted at the Northern Assizes, on the 26th of March, for the wilful murder of Francisco Rodriguez, a seamen, and having been found guilty of manslaughter and sentenced to penal servitude for life—the Board of Trade have directed that his Certificate of Service, No. 71,097, shall be Suspended.

ROCKS AND SHOALS.

Mediterranean—S.E. Coast of Spain—Capt. J. W. Sylvester (American barque *John Wesley*,) reports as follows:—

"On my last passage from Constantinople, while standing southward, with a light breeze from W.S.W. I ran directly

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over a small shoal of not over four fathoms. The shells, pebbles and clay, of which it seemed to be composed, were very plainly to be seen. We were right on it before we saw it, and were off it before we had time to sound, although going very slow at the time, giving us a short but good opportunity to see it plainly. The tower on Point Mesa (Point Mesa lies about 12 miles N.E. of Cape de Gata), bore W. by N. 2 miles distant, and Carbonera village N.W. by N. 3 or 3½ miles. The shoal was small to appearance, not much over 100 feet in circumference, white on top, and dark around it as though covered with seaweed. The marks I took for it were the dark point (southern) of Point Mesa in one with a bold white cliff on the western shore beyond. I mention the dark point because there was a reddish brown point in a line with the dark point, which we opened out as we stood southward, and the Castle at Carbonera in one with the northern slope of a small hill just back of the village."—*Mitchell's Maritime Register.*

CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from March 25th, to April 25th. 1858.

Florida Reefs:—*Wrecks from mistaking the Light on Dry Bank for that on Carysfort Reef;* The *Empire* (s.) arrived at New York, from New Orleans, reports having seen three large ships on shore near Coffin Patches, March 24th, these vessels having, evidently mistaken the *New* Light on Dry Bank, for that on Carysfort Reef. There is now a White Fixed Light on Dry Bank;—and the Carysfort Reef Light, has been changed from *Fixed* to *Revolving.* (For further particulars respecting these Lights, see *Mer. Mar. Mag.* No. for March p. 92-93.)

England—S. Coast—Eddystone Lighthouse:—With the view of rendering the Lighthouse at the Eddystone, more distinctly visible from Vessels at Sea during the Day-time, the Tower is about to be Coloured Red and White in alternate horizontal Bands.

England—E. Coast,—Navigation of the River Tees:—alterations for the purpose of indicating the New Channel, have been effected in the positions of the Bran Sand Light-Towers and the Outer Buoys, the present marks and bearings of which are as follow, viz.:—

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The Fairway Buoy (Black, Spiral with a Beacon.)
Seaton Lights in line . . . . . N.W.$\frac{3}{4}$W.
Bran Sand Lights in line . . . . . S.S.W.
No. 1 Black Buoy . . . . . S.W.
[Distant 350 fathoms]

The Black Buoy No. 1.
South end of Salt Holm Trees, touching first small Hill north of Snook Point S.W.byW.$\frac{1}{2}$W.
Elwick Hill, over north part of Seaton square . . . . . N.W.$\frac{1}{2}$W.

The Black Buoy No. 2.
Hart Mill, in line with Seaton Low Light. N.N.W.$\frac{1}{2}$W.
Norton Church, between the two small Hills north of Snook Point . . . W.$\frac{1}{4}$S
South Gare Buoy (chequered Black and White) north end of Snook Point in line with the middle of Salt Holm Trees W.S.W.
Hart Mill, just open to eastward of Stranton Church . . . . . N.N.W.$\frac{3}{4}$W.

The Bran Sand Lights would be re-lighted on the night of the 10th April, and will lead over the Bar into the entrance of the Channel in a line S.S.W.

Bearings magnetic.

Scotland—E. Coast—Change in the Colour of the Buoys in the Firth of Tay:—With the view of carrying out the arrangements for adopting a general system of Beacons and Buoys—viz. in entering a Port or Harbour, keep Red Buoys on the Starboard hand, Black Buoys on the Port hand, while Chequered Buoys mark Centre Dangers—it is intended that the following Changes shall take place in the Colouring of the Buoys in the Tay, on or about the 15th day of July next:—

Fairway Buoy, from Black to Red and Black, Horizontally, with "Tay, Fairway," in White letters.

No. 1 Buoy on the Gaa Sands, with Staff and Ball, from Black and White Chequered to Red.

No. 2 Buoy on the Gaa, from Black and White Chequered to Red.

No. 3 Buoy on the Gaa, from Black and White Chequered to Red.

No. 4 Buoy on the Gaa, from Black and White Chequered to Red.

The Lady Buoy, from Black and White Chequered to Red.

The Horse-Shoe Buoy, from Black and White Chequered to Red.

No. 1 Buoy on the Abertay Sand, from Red to Black.

No. 2 Buoy on the Abertay Sand, from Red to Black.

No. 3 Buoy with the Three Balls, on the Abertay Sand, from Red to Black.

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No. 4 Buoy on the Abertay Sand, from Red to Black.
No. 5 Buoy on the Abertay Sand, from Red to Black.
No. 6 Buoy on the Abertay Sand, from Red to Black.

The Small Buoy at present marked "New Shoal," and painted Green, near by No. 1 Staff and Ball Buoy on the Gaa Sands, will be painted Red, with "New Shoal" in Black Letters.

The Buoys will all be numbered as formerly; those painted Red on the Starboard hand, will have the Figures in Black, and the Black on the Port hand, will have the Figures in White.

Ireland—E. Coast,—Dublin Bay.—Change of Colour in Buoys on Burford Bank:—For the better distinction of the Buoys which mark the Burford Bank, on or about the 1st of May, 1858, the Colour of the Buoy which marks the south end of this Bank, will be changed, and thenceforth will appear Striped lengthway, Red and White alternate.

Atlantic—United States—Fixed Light on Mark Island, Isle Haut Bay:—On and after the 1st of March, 1858, a Light would be exhibited from the lighthouse recently erected on Mark Island, at the western entrance of Deer Island thoroughfare, Isle Haut Bay, Maine.

It is a Fixed White Light, placed at an elevation of 52 feet above the sea at high water, and should be visible in ordinary weather at a distance of 12 miles.

The Light-tower is built of brick and painted White. The lantern is Black. The dwelling-house is of wood, painted Brown, and connected with the tower by a brick-work room coloured White.

Approximate position—lat. 44° 7′ 32″N.; long. 68° 43′W. of Greenwich; and from it Saddleback lighthouse bears S.b.W.¾W., distant 10 miles; Eagle Island lighthouse N. by W.¾W., 8 miles; Widows Island, at eastern end of Fox Island thoroughfare, W.¾N., 6 miles; Indian Narrows, and Gangway Rock Bouy, E.N.E. 1¾ miles.

Bearings Magnetic:—Variation 14½°*W. in* 1858.

Atlantic—United States—Fixed Light on Loggerhead Cay, Florida Reefs:—On and after the 1st of July, 1858, a Light will be exhibited from the lighthouse now in course of erection in the middle of Loggerhead Cay, Dry Tortugas, the westernmost of the Florida Reefs.

It will be a Fixed White Light, elevated 152 feet above the mean level of the sea, and should be visible in ordinary weather from the deck of a vessel at a distance of 20 miles.

The Light-tower will be circular, 150 feet high, and of the natural colour of the bricks of which it is built. A keeper's

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dwelling, two stories in height, also of brick, will be erected a little to the southward of the tower.

The position of the tower is 2½ miles due west of the present light within the walls of Fort Jefferson, on Bush or Garden Cay, Dry Tortugas, and is in lat. 24°37′20″N.; long. 82°55′10″W. of Greenwich by the U.S. Coast Survey.

The Light on Bush Cay will be fitted with other apparatus, and continued as a *harbour light* for the locality.

[*Bearings Magnetic*:—*Variation* 6° *East, in* 1858.]

England—W. Coast,—Workington Harbour,—Buoys to mark a new Channel:—On and after the 1st of May next, all Vessels entering or leaving the Harbour of Workington, Cumberland, must take the new West Channel, as the present, or North Channel, will be closed after that date.

The following are the Marks and Bearings for entering the new Channel:—A Red Buoy will be placed on a Spit of Sand, at the entrance to the new Channel, from which the Light upon the head of the John Pier, will bear by compass nearly E.byS. This Buoy must be left on the Larboard Side, giving the John Pier-head a berth of about 100 feet on the Starboard side. After passing the John Pier, a Perch, with a White Board upon it, will be a leading mark by day, or the Blast Furnaces on the North side of the Harbour by night, keep right a-head, until the Inner Light upon the Wood Pier bears about S.E.½S. Then steer S.E.½E. for the entrance to the Harbour, keeping the Light upon the Wood Pier on the Starboard side, and passing the Perch with a Red Cask upon it by about 10 feet on the Larboard side, when a boat will be in attendance.

North Atlantic—Bay of Chaleur.—Fixed Light on Birch Point, Miscou Island:—There is a Fixed Bright Light on the N.E. end (Birch Point) of Miscou Island, entrance of the Bay of Chaleur (south side). Position, lat. 48° 1′N. long. 64° 29′ 28″W. of Greenwich. The height of the Light is 79 feet above the sea level, and is visible 12 miles in clear weather. The Lighthouse is of wood, octagonal, and painted Red.

NEW BOOKS AND NEW EDITIONS.

COMPANION TO THE NAUTICAL ALMANAC, or Tables of Preparation, by which the elements from that Volume may be corrected at sight, and the Altitude corrections of all the Heavenly Bodies used in Navigation taken out in one Term; by the *Author* of *The Mate and his Duties*. Liverpool: Rockliff & Son. Price 2*s*.

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LETTERS TO A YOUNG MASTER MARINER, on some subjects connected with his Calling. By the late CHARLES LORIMER. New Edition. London: Longman, Brown, & Co. Price 5*s*. 6*d*.

A DICTIONARY, (PRACTICAL, THEORETICAL, and HISTORICAL,) OF COMMERCE AND COMMERCIAL NAVIGATION, with Maps and Plans; by J. R. M'CULLOCH, Esq. New Edition. London: Longman, Brown, & Co. Price 50*s*. Cloth, or 55*s*. bound in Russia.

DANIEL'S BRITISH AND FOREIGN PORT CHARGES. New Edition. London: Janet Taylor, 104, Minories.

BOOKS PUBLISHED BY THE ADMIRALTY.

NORTH SEA PILOT, Part 3; East Coast of England: by E. K. CALVER, Esq. R.N. Price 2*s*. 6*d*.

DIRECTIONS FOR REDUCING TIDAL OBSERVATIONS: by J. BURDWOOD, Esq. R.N. Price 6*d*.

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, in April, 1858. *Sold by J. D. Potter*, 31 *Poultry, and* 11 *King Street, Tower Hill, London; and the principal Chartsellers in the Kingdom.*

		s.	*d*.
N. America.	United States. Delaware River, in two sheets. U. States Survey. 1848. ... ... each	2	6
West Indies.	Cuba Island, in two sheets. Capts. Owen and Barnett, R.N. and Spanish Pilot. Corrected to 1858. each	3	0
China Sea.	Sulu Archipelago. Various Authorities.	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

JUNE 1858.

THE UNITED STATES COAST SURVEY.

(Continued from page 147.)

To the action of that Board the assistance of the Coast Survey was cheerfully and gratuitously rendered, and the results of the Survey and of a careful and accurate examination of the effects of wharves and piers upon harbour currents, have been of the greatest importance to the commercial prosperity of the city. Another very important observation has been made of the existence of a slowly moving northwardly current on both sides of Sandy Hook, tending by deposits of sand to narrow the main ship channel. For the action of this current the Survey provides a remedy which can be applied as soon as it shall become necessary.

We have already stated, that the assistance of astronomical observations is needed in the operations of the primary triangulation. The special objects of the Survey, and the peculiar character of the work done by it, have in their turn exercised a remarkable influence upon Astronomy itself, considered at least as a science of observation. New methods for the determination of latitudes and longitude have had their origin in the necessities of the Coast Survey alone, while the methods already known and practised have been developed and perfected. Special series of observations have been undertaken at the two observatories of Cambridge, Mass., and at numerous minor stations, to obtain the astronomical data requisite for the determination of differences of longitude, while the genius of the most eminent mathematician whom our country has produced, has been devoted to the perfecting of the methods of reduction and calculation.

The determination of differences of longitude by means of the electric telegraph—a method which doubtless suggested itself to thousands, when the telegraph passed from an idea to a reality—was first carried out properly by the Coast Survey. This method has not

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merely yielded results of great value to the Survey itself, but the particular mode of applying it has been generalized into the American method of recording astronomical observations, and of measuring minute intervals of time. This method has been adopted in several European observatories.

The experiments of Mr. Wheatstone, made in 1834, with apparatus devised and executed by Mr. Saxton, gave the first determination of the velocity of electricity in a metallic conductor. This velocity was estimated at about 288,000 miles per second, and until within a recent period, in spite of all analogy, and even of experience, Wheatstone's determination was supposed to hold good, at least, approximately, for galvanic currents as well as for electricity of high tension, and for bad as well as good conductors. The telegraph operations of the Coast Survey demonstrated at the very outset the inaccuracy of received ideas upon this subject: they shewed that the galvanic current moves very much less rapidly than electricity of tension, varying, according to Dr. Gould's discussion of the observations, from 12,000 to 18,000 miles per second, and though not yet fully reduced, they have rendered it, to say the least, probable that the velocity also diminishes as the resistance to conduction increases. Special investigations directed to all these points have been undertaken, and a volume of records and results is now preparing.

To determine the difference of longitude between Cambridge, Mass., and Liverpool, four distinct chronometric expeditions have been sent out, namely:—in 1849, 1850, 1851, and 1855. In the last expedition, the number of voyages made was six, and the number of chronometers sent out, fifty-two. The first three chronometric expeditions gave results which could not be considered as satisfactory, in consequence of the remarkable influence exerted upon the chronometers by differences of temperature, though the instruments were compensated in the usual manner. In the expedition of 1855, an uncompensated chronometer was employed with the others. Great care was taken to observe the temperatures of the chronometers themselves, during the voyage, by means of thermometers, and the results of the compensated instruments were carefully compared with those of the single one without compensation. The chronometers employed were moreover carefully investigated before the expedition, by exposing them to different degrees of heat, and noting the effect upon the rate. The observations of this last expedition, after careful discussion, have given a difference of longitude between Cambridge and Greenwich of $4^h\ 44^m\ 31^s{\cdot}89$, with a probable error of about $0{\cdot}2$ of a second. The successful laying of the telegraph wire between Europe and America, is anxiously looked forward to, as presenting an opportunity for determinations of longitude by the most perfect method which human ingenuity has yet devised. The importance of this single determination can scarcely be over estimated, since it fixes the geographical relations of the old and new worlds.

In connection with its astronomical and geodetical observations, the Coast Survey has been enabled, at a trifling expense, to

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carry out an extensive series of determinations of the three magnetic elements at very numerous stations. These elements, it will be remembered, are the declination, inclination, and horizontal intensity. So great has been the amount of material accumulated, that the report for 1856, now in process of publication, contains for the first time, magnetic charts of the North American continent sufficiently complete to enable us to compare upon the large scale for our own country, the results of observation and of theory. In these charts the lines of equal variation, dip, and intensity, are traced, and a comparison of the two former with those deduced from the general theory of Gauss, exhibits a satisfactory agreement in form. Further observations, especially in the interior, are wanting to enable us to make this comparison quantitatively, as well as qualitatively. The determinations of the declination and variation at points actually upon the coast, are of great service in Navigation. The report of 1856 contains also very valuable and elaborate discussions of the secular variations of magnetic declination and inclination, both upon the eastern and western coasts, reference being had to the earliest recorded observations. Empirical formulas are also given for a number of stations, which enable us to determine with a satisfactory approximation, the two angular magnetic elements at any required epoch.

In the progress of the Hydrography of the Coast Survey, very numerous observations of the tides have been made, for the purpose of correcting soundings, and of determining the establishments of the different ports. The necessity of both these classes of observations is sufficiently obvious, but the superintendent has connected with them observations of a more permanent character, in order to ascertain the laws of the tides in particular localities, and to trace the progress of the tide wave along the coast severally, as well as in bays and rivers. For these observations two species of guage have been used; the self-registering and the common staff guage. The former possesses the advantage of requiring little or no attention, and of furnishing a permanent and reliable record in the form of a curve, of which the abcissas represent the times, and the ordinates the corresponding heights of water. The number of principal stations for tidal observations was 73, of which number 45 were on the Atlantic coast, 18 on the Gulf, and 10 on the Pacific.

Since the commencement of the Survey there have been in all 613 tidal stations, of which, however, a comparatively small number have been furnished with self-registering gauges. The results obtained have been of great practical importance, giving as they do, for the first time, accurate information with respect to the tides of the Gulf and of the Pacific coasts, and leading to the construction of accurate and reliable tide tables.

It is not saying too much to assert, that no single series of tidal observations yet made possesses so high a scientific value as those of the Coast Survey. Not only is the range of coast studied greater, but the character of the tides themselves is in a great measure sufficiently free from the effects of local causes to enable us to obtain from them

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results of definite value for the general theory. On the other hand, the Gulf of Mexico and particular portions of the Atlantic coast exhibit peculiarities of much interest as yet imperfectly investigated, but seeming to show the importance of a careful study. While the tidal observations hitherto discussed have been for the most part isolated,—made at different points upon the earth's surface, by individuals, during a period of about 200 years,—those of the Coast Survey have been made systematically, at numerous carefully-selected stations, upon the coasts of a continent lying between two great oceans, and under the direction of a single person.

An elaborate discussion of these observations has led to the construction of maps of the co-tidal lines of the Atlantic, Gulf, and Pacific coasts, which are of especial interest, not merely from their connection with our own shores, but from the fact that they are the only series of co-tidal lines yet deduced from an extensive and connected series of observations. The term "co-tidal line," it will be remembered, was first introduced by Mr. Whewell, to denote a line passing through all those points which have high water at the same hour of the day. It is convenient to assume twenty-four such lines, and they may obviously be regarded as forming the crests of successive advancing tide waves. Their shape, velocity, and direction of motion, will depend upon the configuration of the coast, the depth of the ocean, and the various local causes which disturb the uniformity of their progress, and cause divisions and interferences of divided waves. Were no disturbing causes present, the co-tidal lines would correspond with the meridians, each line at a certain distance behind the meridian of the moon at its culmination. It is easy to see, too, that the co-tidal lines must differ upon the eastern and western shores of a continent like that of North America, since the tide wave moves from east to west, and is therefore upon the eastern coast an incident, and upon the western a receding wave, the character of which is determined by the flow of water, and its pressure from north, south, and west. The co-tidal lines of the Atlantic coast follow the general outline of the coast itself in a remarkable manner, the velocities measured in a direction perpendicular to the front of the waves, varying from 24 to 40 miles per half-hour. The tides on the Atlantic coast are of the regular semi-diurnal class; the diurnal inequality is not large, and generally difficult to trace, though easily recognised at particular periods. On the Gulf coast, on the contrary, the tides are small, the semi-diurnal being masked by the diurnal waves. The tides of the Pacific coast are remarkably regular, both in the diurnal and semi-diurnal waves, and moreover rise to such heights as to render observation easy. Throughout the extent of coast examined, the co-tidal lines for the Pacific are either sensibly parallel to, or make but a small angle with the coast.

Tide tables for the principal sea ports of the United States have been published by the Superintendent of the Coast Survey, by authority of the treasury department; they are based exclusively upon the observations of the survey, and will be extended and corrected as

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the survey advances. Meantime, their value to navigators places them among the important results of the Coast Survey.

The tidal observations of the Pacific coast have casually led to a determination of great scientific interest, that of the average depth of the Pacific Ocean, between the coasts of Japan and California. On the 23rd of December 1854, an earthquake occurred in Japan, by which the town of Simoda, in the island of Niphon, was destroyed. From the imperfect accounts which have reached us, it appears that at 9 A. M. on that day, the severe shock of an earthquake was felt on board the Russian frigate *Diana*, then lying in the harbour of Simoda. Half-an-hour later the sea came into the bay in an immense wave, thirty feet in height, overwhelming the town and then receding. This advance and recession occurred five times, and by 2.30 P. M. all was again quiet. The depth of the sea, during these changes, varied from less than eight to more than forty feet. Upon the same day an extraordinary rise and fall of water was observed at Peel's Island, one of the Bonin Islands, and the tide continued to rise and fall during the day, at intervals of 15 minutes, gradually lessening until evening.

The self-registering gauges at San Diego and San Francisco, exhibited on the 23rd and 25th of December, remarkable irregularities of the tidal curves. Each gauge exhibits three sets of waves at short intervals, and there can be no doubt that these waves were produced by the same cause which determined the rise and fall of the ocean at Japan and the Bonin Islands. No record of the occurrence of an earthquake in Japan, on the 25th of December, has yet reached us, but the waters rose on the evening of that day at Peel's Island to the height of 12 feet. The distance of Simoda from San Francisco is 4527 nautical miles, and from the same port to San Diego 4917 miles. From these data, and the times at which the disturbances occurred upon the two coasts, the waves from Simoda to California would move at about the rate of 360 miles per hour, or 6 miles per minute, and would have a length of about 200 miles. This would give for the average depth of the Pacific about 2200 fathoms, or rather more than two miles. The publication of the official report of Admiral Pontiatine, who commanded the *Diana*, will probably permit more accurate determinations, and explain the origin of the disturbance upon the 25th of December.

The publication of maps and charts constitutes, as may be supposed, one of the main objects of the survey. Upon the preparation of these an immense amount of labour is bestowed, the value of the work consisting chiefly in the accuracy of the details. In fact the whole subject may be fairly considered as constituting a special branch of science, with a system of signs and a mode of expression peculiar to itself. The most advantageous methods of presenting to the eye an easily intelligible view of the Topography and Hydrography of the coast have of course occupied a very large share of attention. The general treatment of the subject, the arbitrary signs and other details being once settled, and the triangulation and plane-table work being finished, the maps are drawn and the work of the engraver be-

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gins. In order to render the results of the survey useful and accessible as soon as possible, and at the same time to exhibit the progress of the work, three classes of charts are engraved. These are termed sketches, preliminary charts, and finished charts. The sketches are of two kinds; progress sketches showing from year to year the advance of the work, and sketches of parts of the coast whether connected or detached. These are generally engraved by apprentices in the office of the Survey, and serve as subjects for practice. They are added to, year by year, and lithographic transfers published in the annual reports. In this manner it rarely happens that a year elapses between a Survey and its publication in some useful shape. The preliminary charts serve nearly the same purpose as the sketches, but are larger and more finished.

The finished charts are divided into three classes. The first are called inshore or coast charts, and are drawn to a scale of $\frac{1}{80000}$. They embrace the shore line, the interior as far as the nearest main road, and the hydrography for about fourteen miles from the shore. The second class embraces what are termed off-shore or general coast charts, drawn to a scale of $\frac{1}{400000}$, giving the shore line and the general topography of the coast, so that it may be recognised by the navigator, but omitting minute details and giving the soundings to the depth of at least 120 fathoms. The third class is composed of minutely detailed charts of harbours, anchorage, &c., exhibiting the sounding, tides, and currents, the outline of the shore, the topography of the adjacent country; in short, presenting the complete results of the Survey. These charts are drawn on scales varying from $\frac{1}{5000}$ to $\frac{1}{80000}$.

The finished charts require the work of first class engravers. These are so difficult to procure, that, in spite of the urgent necessity of the case, and the unceasing efforts of the Superintendent, there were but four first-class engravers in the office at the beginning of the year 1856. Even these were only obtained by a special agent sent to Europe for the express purpose. With a wise liberality the charts are sold at the lowest possible rates, while the gratuitous distribution of the annual reports of the Coast Survey gives a still wider circulation to its graphical results.

As the greater number of maps and charts are engraved upon copper, and as the softness of this metal renders it impossible to obtain more than a limited number of impressions from a single plate, a method of reproducing the plates themselves becomes indispensable. Such a method is found in the electrotype process, which is now applied in the office of the Survey upon a very large scale, and which has there received a development and a perfection which leaves little to be desired. We believe that we hazard little in asserting that, as regards the thickness and quality of the metal precipitated, the size of the plates, the prevention of adhesion between the original plate and that deposited, and the absolute command of the whole process, the electrotype operations of the Coast Survey are unequalled in any country.

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It has very recently been found possible to print from thin electrotypes merely folded over the edges of a stout plate of metal which serves as a support or back. In this manner plates of the first quality can be furnished for about one-third of the cost of those deposited of the usual thickness. Processes are also employed by which small plates can be pieced out in any direction and to any desirable size,—no line of junction being visible between the original and the addition.

The particular apparatus and arrangements employed in the electrotype department have nearly all originated in the department itself, and have been fully described in the annual reports of the Survey. It cannot be doubted that they have exerted a positive influence upon the progress of this branch of art.

It was just that an elaborate and complete Survey of the phenomena of the Gulf Stream should be executed by a descendant of Franklin, and it may well be conceived that the peculiarities of that magnificent current, alike interesting from the practical and the scientific point of view, have engaged a special share of attention. In accordance with the direction of Congress that a map exhibiting the state of our knowledge of the Gulf Stream should accompany the report of 1853, the work of investigation was pushed forward during that year, and results of great interest obtained, and illustrated in two charts appended to the report. These results show that the Gulf Stream is not, as generally supposed, a single broad current of warm water flowing in a northeasterly direction, but that it is in reality an aggregate of separate currents, alternately cold and warm, and exhibiting a certain degree of parallelism. The method of examination employed was the very obvious and natural one of running numerous sections across the Stream, and observing the depth of the water and the temperature at different depths. The number of positions observed in each section was made to depend upon the more or less rapid changes of temperature, and the temperatures were observed at the surface and at depths of five, ten, twenty, thirty, fifty, seventy, one hundred, one hundred and fifty, two hundred, three, four, five and six hundred fathoms, so as to reach into the cold polar currents lying beneath. In this manner ten sections were surveyed, the temperatures being determined for moderate depths with Six's self-registering thermometers, and for greater depths, with Saxton's metallic thermometers. If we employ the term Gulf Stream in its broadest sense and understand by it the aggregate of *all* the warm currents flowing from the Gulf of Mexico into the North Atlantic, a glance at the Coast Survey map shows us at once the existence of at least four distinct warm currents separated from each other by cold bands, a fourth cold band separating the first or inner warm band from the shore. Each warm band is narrowest and warmest in its most southerly section—that of Cape Canaveral—and becomes broader and cooler in its progress northward and eastward, while its boundaries become less and less clearly defined. The most cursory observation shows that these bands are parallel to the outline of the coast, and that as we recede from the shore upon any section they become broader, cooler, and

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less sharply separated from the intervening cold masses. The Gulf Stream proper forms the second warm current in order from the shore. As might naturally be expected from its greater density, the colder water tends to occupy the lowest position, but instead of forming a level plateau it follows the irregularities of the bottom. This again determines the vertical distribution of the warm currents, and we find accordingly that in each section, as far as examined, the curves which represent the depths corresponding to equal temperatures are sensibly parallel to the contour of the bottom. This fact is well illustrated on the Charleston section, where the bottom of the ocean exhibits remarkable irregularities. Thus the depth on this section gradually increases to a distance of fifty-three miles, when it suddenly descends to upwards of six hundred fathoms. Ninety-six miles from the coast we find a range of hills, having a height of eighteen hundred feet and a base of about eleven miles on the seaward side. One hundred and thirty-six miles from the coast occurs another range of hills fifteen hundred feet high and twenty-eight miles base towards the shore,—and six hundred feet high with a base of about seventeen miles on the outer side. Beyond this there is a more gradual rise. Now the forms of the curves of equal temperature resulting from multiplied observations at different depths along the section correspond exactly to the outline of the bottom.

Perhaps the most remarkable peculiarity of the Gulf Stream is what has been appropriately termed the "cold wall," a mass of cold water lying between the warm water and the shore, and sharply defining the inner boundary of the great current. The change from the warm water of the stream to the cold body of water inside of it towards the shore, is particularly sudden and well marked in the northern sections, but may also be easily distinguished south of Cape Hatteras. In the cold water inshore from the Gulf Stream, a current setting southward has been observed, as also in the cold band outside the axes. It is not yet certain, however, that these are permanent currents.

Another remarkable fact is observed in comparing the temperatures of the northern and southern portions of the Gulf Stream. Taking the maximum temperatures at twelve or fifteen fathoms beneath the surface, there is, as a general rule, an increase of temperature in passing southward. But in successive years we find the highest temperature at twelve fathoms, on the Cape Henry section, higher than at Hatteras, while the temperature in the axis of the stream at Sandy Hook in July 1846, was higher by five and a half degrees than at Charleston in June 1853. The underlying polar currents are as distinctly marked in the southern as in the northern latitudes. Thus in latitude 37° 20′ the temperature at a depth of four hundred fathoms below the warmest water of the Gulf Stream in August 1846, was 49° Fahr., while in the same position in latitude 28° 20′ it was 48½° Fahr. The fact that the side limits of the polar current recede from the shore as the depth increases is clearly marked on all the sections.

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It is hardly necessary to observe that much remains to be done to complete the survey of the Gulf Stream. But it may be justly asserted that the results obtained by the Coast Survey have placed the whole subject in an entirely new point of view and have contributed greatly to the solution of one of the grandest problems in physical geography. It may be remarked in this place that the most recent observations fully confirm the theory of Franklin that the Gulf Stream makes a complete circuit in the Atlantic, returning again to its source. A branch of the main current is however thrown out toward the coasts of Ireland and Norway, and is thence reflected toward the Arctic ocean. This branch appears to offer the most feasible passage to the open polar sea, to the discovery of which so much attention has been recently directed, and which appears to be in fact only a forgotten reality.

We have adverted to the observations of latitude, azimuth, and longitude, as requisite to determine the position on the earth's surface of the stations, the relative situation of which as to distance and direction is ascertained by triangulation. They serve thus incidentally to determine the *figure* of that portion of the earth over which the work extends. While, in other countries, extensive operations have been executed for the special purpose of measuring arcs of meridians and parallels, the Coast Survey furnishes those important additions to one of the highest departments of physical knowledge, without any expenditure not absolutely necessary for the perfect attainment of its most direct and practical objects. An individual arc of $3\frac{1}{2}$ degrees from Nantucket to Mount Blue in Maine—another of $2\frac{1}{2}$ degrees from the head to the capes of Chesapeake Bay, which may be extended $1\frac{1}{2}$ degrees farther to Cape Hatteras, and an arc of the parallel extending 4 deg. from Nantucket to New York, are among the results already obtained. They exhibit a general conformity to the elements of the earth's figure deduced from all previous measurements, while they show marked local variations which have become the subject of special study.

These variations in the direction of the plumb-line are found to be not only such as would result from want of uniformity in the geological structure in the immediate vicinity of stations, but to extend like undulations over considerable regions.

In order to obtain these "station errors" as free from residual instrumental errors as possible, the capabilities of various instruments and methods for determining latitude, have been successively tried,—large vertical circles, repeating circles, the prime vertical transit, the zenith telescope (or equal altitude instrument), and Airy's zenith sector. The latter instrument is the most perfect of its kind, possessing many improvements on the zenith sector of the British Ordnance Survey, the only other of the kind in existence. The accuracy of its results, however, is rivalled by those of the zenith telescope, the application of which, to observations of latitude by equal meridian altitudes of stars to the north and south of the zenith, is of American origin, and has been greatly perfected in the Coast Survey. Com-

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bining portability and facility of use, with great accuracy, it has become the favourite instrument, and no observer who has ever used it, is willing to return to others.

In order to bring out the various elements of error, observations have been made at the same stations with different kinds of instruments, with the same instrument by different observers, and by the same observer with two different instruments of the same class. By a consistent application of the method of least squares, the observations have been severely scrutinized, and their relative values determined without the admission of anything like arbitrary preference.

Looking at the observations of azimuth, we again find the Coast Survey testing the relative value of known methods, and perfecting them, or devising new ones,—not only *proving* but *improving* all. Abandoning the methods by observations of the sun in low latitudes, and by transits of stars over the verticals of stations, as involving too largely, the difficult element of *time*, the observations of azimuth have been made principally on close circumpolar stars, especially the pole-star. The reduction of observations made near the time of the star's greatest eastern or western elongation, has been greatly facilitated by the use of a simple formula. An elegant method has been introduced, of observing the star at corresponding equal times, before and after either culmination, by which arrangement, the labour of computation is almost entirely saved, the mean of each pair of corresponding observations giving at once the meridian. The observations of azimuth have shown irregularities to exist in the direction of the plumb-line, similar in kind and amount to those indicated by the latitude observations,

One of the most important and striking features of the methods of the Coast Survey, is the total absence of eclecticism, which, in former times, was an acknowledged principle with observers, and to which there is even now a strong leaning in some quarters. The observer may indeed choose circumstances favourable to his purpose, and may affix to the observations a statement of facts affecting their quality, but here the influence of his judgment or bias ceases. The observations are made to tell their own story, and by the searching test of the method of least squares their relative weight is ascertained, and rejections, if necessary, are made according to Peirce's criterion. The step is taken or combination made; but the reasons for it are such as to be necessarily arrived at by every one, according to the principles laid down. All observations are liable to more or less uncertainty, and there are probably classes of errors which no number of observations or variety of methods can entirely eliminate; it will always be necessary to discriminate, and to apply small corrections to the results, in order to make them fulfil the theoretical relations existing between them. When this is done according to fixed mathematical rules, all uncertainty vanishes, and truth must be the gainer; while, on the other hand, when it is allowed to be done according to personal judgment or bias, results must vary with different computers, and the door is opened to falsification and fraud.

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The Coast Survey is at present under the general control of the Treasury Department, which appoints its officers and regulates their compensation. The Department furthermore authorizes all expenditures, approves the plans and estimates of the Superintendent, and makes general regulations for the work under the law. The immediate agent of the Treasury Department is the Superintendent, who arranges the plan of conducting the work, attends to its business details, issues instructions for its execution, and is responsible for the scientific accuracy of the whole. All persons and parties employed report directly to the Superintendent, who in turn presents an annual report to the Department, offering a complete and detailed account of the work done during each year. The annual reports are amply illustrated by maps and charts, and are extensively and gratuitously distributed. The distribution is made by the assistant in charge of the office, who has all the reports in his possession, and who distributes them according to a prepared list.

In addition to the laborious duties of the general direction of the Survey, and inspection of the parties, the Superintendent himself personally assists in the execution of the work, taking the field, and making observations as required. The different parts of the work are entrusted to assistants, who act as directed by the Superintendent, and are responsible to him, the office of the Survey being considered as a party, with an assistant in charge. Each field party consists of a chief, who may have one or more assistants, and of several hands. In the office, computers, draughtsmen, engravers, printers, mechanics, clerks, &c. are employed, as occasion may require.

In the organization of the Survey, three classes of persons are recognized by law. These are civilians, officers of the army, and officers of the navy. The civilians form the permanent nucleus of the Survey. Their salaries are under the control of the Department, and they are promoted or lowered according to their merit, as measured by the results of their work. As they are not, save only in exceptional cases, subject to frequent changes, they form a constantly efficient and trained body, and preserve uniformity in the business and methods of the Survey. Such a nucleus is obviously indispensable, as the whole work might otherwise be disorganized by calls for the professional services of officers of the army and navy. Thus, on the breaking out of the Mexican war, all the officers of the line of the army, and part of those of the staff, serving on the Coast Survey, were detached for active military service.

The officers of the army and navy are detailed by the heads of their respective departments, on the application of the Superintendent, through the Treasury Department. They receive no extra emolument from the Coast Survey, and are of course liable to be frequently changed. Their employment is, however, very advantageous both to the Survey and to themselves, since they furnish to the former, active, intelligent, and zealous assistants, while they of course profit by the peculiar scientific training offered in the service to which they are detailed.

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In fact, it is easy to see that there is no part of the Hydrography or of the topographical Surveys which does not furnish advantageous practice to an officer in either branch of the service. The topographical engineer finds employment in his own department. The survey of harbours and the study of tides, currents, shoals, entrance channels, and all those peculiarities which distinguish the different seaports, are of the utmost importance in determining the proper sites for fortifications and permanent defences. They furnish weapons of offence as well as defence. In the recent European war, the success of several important operations depended wholly upon the skill and promptness with which surveys were executed by naval officers. But even in time of peace, the advantages of having on board of every ship thoroughly trained hydrographers can hardly be overestimated, for commerce, and therefore civilization, profits by every new harbour surveyed, every channel sounded, every current whose course and velocity are traced. The law requires that as many officers of the army and navy be employed as may be compatible with the successful prosecution of the work.

The work of the Coast Survey is naturally divided into field and office work. The field work consists in the actual surveys and observations of various kinds, and is either original or of verification. The methods of conducting the work are laid down in general instructions by the Superintendent, who also directs what scientific processes and instruments are to be employed. The assistants make monthly reports in prepared forms, and keep daily journals, which are placed on file in the office. A general report is also made to the Superintendent on taking and leaving the field, and in the month of October of each year, for the annual report.

The office work consists of computing, drawing, engraving, printing, &c., and is for the most part under the care of the assistant having charge of the office. The publication and distribution of maps and the care of the accounts and property are placed in the charge of the general disbursing agent, who gives bond to the Treasury Department.

The minute attention required to secure accuracy in the computations of the Coast Survey is well exhibited in the system of checks employed. The field parties in the first place compute their own work, and a second computation is then made independently by persons having no connection with the field work. The assistant in charge of the office then examines and compares the two computations and reports any discrepancies to the Superintendent for examination. The records of observations and calculations are put in form for publication by the assistant in charge of the office under the direction of the Superintendent: but the records and results now publishing as a separate work are under the charge of a special officer. Drawings are first executed by the field parties, and reductions of these to the scale of publication are then made by regular draughtsmen in the office, and these drawings are finally revised and verified. It is almost needless to mention that all the topographical signs, forms, and sizes of letters, &c., are prescribed by rule so as to be uniform. This sub-

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ject, as already mentioned, is one which required special study. Thus the scale of shade is made to express the degree of slope by the strength of the hachure lines and the distance between them. The engraving of the maps and charts is under the charge of an assistant, who verifies all engraved maps; from him they pass to the assistant in charge of the office, who finally reports them to the Superintendent.

The prices of the maps and charts are fixed by the Treasury Department, upon the general principle that the sale should pay for the cost of paper and printing. The small maps are sold for fifteen, and the larger for twenty to fifty cents. Besides the distribution by sale, many copies are forwarded to literary, scientific, and commercial institutions, as designated by the Treasury Department.

In all cases, the original records of observations and field-work are transmitted to the office after duplicates have been made by the field parties. These are deposited in a fire-proof building, in charge of the general disbursing agent. The instruments belonging to the Survey, properly marked and numbered, are also deposited in a fire-proof building, the repairs being almost always executed in the office.

The general estimates for the Survey are made by the Superintendent, who controls the expenditures for field and office work. On receiving his instructions for work, which usually state the limit of expenditure, the assistant makes an estimate for the number of hands required, and for the general expenses of his party. This estimate, after the approval of the Superintendent, is the authority of the disbursing agent in settling the accounts. The rules of the work require, that a voucher in the form of a receipt be presented for all sums exceeding one dollar.

The chief of each party keeps an account of the party disbursements, and transmits it to the general disbursing agent, who supplies funds, audits accounts, and is responsible to the Treasury Department.

Beside the very numerous duties of supervision, and of personal exertion which are discharged by the Superintendent, there are many special subjects which are under his immediate direction, and in charge of a special assistant. Such are the researches upon the tides and the Gulf Stream; the preparation of the records, and results for publication; the longitude work both astronomical and telegraphic; experimental researches on various practical subjects bearing directly upon the Survey; the expansion of paper, and the various modes of making and preparing it; the covering of copper plates with surfaces of iridium; improvements in different kinds of engraving, and other matters too numerous to mention.

The amount of labour, skill, and care required to maintain the harmonious action of the different parts of an organization like that of the Coast Survey, may easily be imagined, and we may not unreasonably ask, how many scientific men in our own, or in any other country, possess the extent and variety of knowledge combined with the tact and the executive capacity which such a work demands, and which it has called forth.

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The Coast Survey is a national work of which we may well be proud. No other geodetic operations have ever been conducted upon so gigantic a scale, or have yielded such fruits of usefulness and honour. The work is worthy of the national spirit which originated it, and which it illustrates. It is one of the great ideas which we have carried out. Like every great work, it has a permanent value, and if national in conception and in execution, is universal in its example and its utility. It is estimated that if the annual appropriations are continued upon the present scale, the Survey can be completed in about twelve years. May we not hope that it will continue to command the sympathy and support of every patriot, and that it will be permitted gloriously to complete that which has been so worthily begun.

THE SOLWAY FIRTH.

W. COAST OF ENGLAND.

The following new Sailing Directions for Port Silloth and Port Carlisle, have been issued by the Harbour Masters of those places :—

Port Silloth, on the eastern side of the Firth of Solway, is about 10 miles north eastward from Maryport, and is daily increasing in importance, being connected by railway with Carlisle, Newcastle, and Edinburgh, the rails of which are laid on to the quays. It contains a wet dock, with entrance gates 60 feet wide, at present not quite finished, and a jetty from the dock entrance into 10 feet at low water. The dock sill is 3 feet 6 inches above low water-mark; and, by adding 5 feet to any tide in Holden's Liverpool Tide Table, the depth over the sill will be given for high water. Vessels in the meantime discharge and load alongside the jetty, at the end of which there is a Green Light. In Silloth Bay (between Lee Scar and the jetty) there is excellent anchorage in from 4 to 6 fathoms at low water, on a clay bottom.

It is high water here on the days of full and change of the moon at 11h. 35m. Spring tides rise 26 feet, and neaps, 20 feet.

The harbour charges have not yet been fixed, but it is probable that they will not be more than 6d. per register ton, the expenses for Lights included.

Branch pilots for Silloth may be had off Maryport, if required; the charge is 1s. 9d. per foot.

Sailing Directions.—The fairway course from about a mile off Workington to the Light-vessel at the entrance of the channel, is N.E. ¼ N.; and, to avoid the tail of Robin Spit, care should be taken not to bring the vessel to the eastward of E.N.E., on which bearing the Bright Light on Lee Scar will be in one with it. This Light-vessel is in the middle of the channel, in about 3¾ fathoms at low tide, and exhibits a Red Fixed Light at 25 feet above the water, visible 6 miles; from it Maryport outer Light bears S. by W. ½ W. 4¼ miles; Southerness Light N. ¼ E. 5½ miles; and Lee Scar Light

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E.N.E., 6 miles. It has a Black Ball at the mast-head during the day, and during fogs a Bell is Tolled.

Having passed the Light-vessel, continue to run on N.E. ¼ N. 1¼ mile, as it will lead you up in mid-channel in 3½ to 4 fathoms at low water; and when the Bright Light on Lee Scar comes in one with the Cott Red Light bearing E. by N. ½ N. alter your course to that direction, as it will carry you up through the fairway as far as Lee Scar, in a depth of 2¼ to 5 fathoms. Silloth Harbour is about half a mile above Lee Scar.

When following the preceding instructions, it is necessary to bear in mind that, as far as Silloth Bay, the Black Nun-Buoys should be kept on the port, and the Red Can-Buoys on the starboard hand. The Black and White Striped Buoy marked "F" in the fairway off Beckfoot, is passable on either side. The shoalest part of the channel, on which there are only 2¼ fathoms at low water, is about half a mile below this latter Buoy; thence to Silloth the the depth is from 3 to 5 fathoms.

Port Carlisle a dry harbour 10 or 11 miles up the Firth from Silloth Bay, is connected with Carlisle by railway, the rails of which run on to the quays. It is high water here on the days of full and change of the moon at 12h. 10m.; spring tides rise 18 feet, and neaps 11 feet. The flood runs 3 hours.

The harbour expenses, including Light charges, are—Coasting vessels 4d., and Foreign vessels 9d. per register ton.

Sailing Directions.—In this part of the Firth of Solway, the sands so frequently shift their positions, that detailed instructions for running up are useless; it is necessary, therefore, to keep a good look-out for the Buoys, which are all placed in the deepest water, and numbered 1, 2, 3, &c. Pilots can be had off Maryport, if required; the expenses are 3s. 6d. per foot.

At Annan Foot, there is a Bright Tide Light, and two perches on the western side of the entrance; the light is shown from half-flood to half-ebb. There is also a Tide Light on the end of the jetty at Port Carlisle, 3 miles above Annan Foot, on the opposite or southern side of the channel; this Light opens off Knockross Point, on a S.E. by E. bearing. After passing Annan, soundings should be taken of the English side of the channel up to Port Carlisle.

THE MEYER AND M'DONALD ISLANDS IN THE SOUTHERN INDIAN OCEAN.

A paragraph, headed "Curious Discovery in the South Atlantic," having recently gone the round of the Public Journals, and as it relates to a group of Islands, two of which have been on the charts for the last three years, we think it necessary to collect together all the information at present known on the subject.

These Islands are directly in the way of vessels that take the

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composite track of 53° S. to the Australian colonies, and were discovered almost immediately after the rage for the "diggings" called up a new class of ships, to take the shortest possible route, in the shortest possible time, to that land of gold, where every eager emigrant expected to make his fortune and return in an incredible short time, a veritable Crœsus. Now, if we mistake not, the following will be found to be the true order of discovery :—

Nov. 1853 :—Capt. Heard, of the American ship *Oriental*, saw islands in lat. 53° 10′ S., long. 74° 10′ to 74° 40′ E.—*Maury's Sailing Directions.*

Jan. 1854 :—Capt. McDonald, of the *Samarang*, discovered two islands—

the 1st—in lat. 53° S., long. 72° 35′ E.,—McDonald Island of the Admiralty Charts.

the 2nd—in lat. 53° 3′ S., long. 73° 31′ E.,—Young Island of the Admiralty Charts.

Dec. 1854 :—Extract from the log of the *Earl of Eglinton*, Capt. J. S. Hutton—

Nov. 30th—lat. 51° 21′ S., long. 70° 1′ E., strong breeze from N.N.W. with snow.

Dec. 1st—lat. 53° 1′ S., long. 75° 30′ E., strong breeze from W.N.W. with snow.

Steering S.E., southerly, at 2 a. m., on the 1st December, just as daylight was breaking, land was observed right ahead ; all hands were immediately called, and the studding sails that were set on both sides, hauled in, and we rounded close under the N.W. shore—after passing two rocks off the western point : we hauled in within three to four miles of the shore, which was covered with snow, and from fifty to eighty feet high. No shrub nor vestige of verdure was to be observed. That we were near the habitation of numerous ocean fowl was evident, since they quite shaded us overhead.

A large conical mount on the northern end resembled in height and appearance the Peak of Pico (Western Isles)—also a table land, in appearance like Table Mount, in the Cape Colony, and as seen from Table Bay. Although the weather was clear, we lost the extreme end in the distance, and a large quantity of snow lay on it. In calculating the position from excellent sights on the previous noon, as well as the noon of that day, the N.W. end lies in lat. 52° 53′ S., and long. 73° 50′ E. The island appeared from 15 to 20 miles in N.W. and S.E. direction ; but as we lost the land in the distance, it may extend beyond that length.

Dec. 1854 :—Capt. J. Attwaye, of the *Herald of the Morning*, reports from his log as follows :—

Dec. 3.—I discovered an island, and sounded in 73 fathoms, on black sand. A harbour about ten miles distant, good to view, but exposed to westerly winds. On the next day, the 4th, a small island, distant from the larger one about ten miles, and a steep rock about a mile from it ; the large island about forty miles, and the small about nine miles long. I had good observations when close to and sailing along

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two sides of the island. I give the middle of the large island lat. 53° 10′ S., long. 74° 36′ E. Longitudes deduced from chronometers, which leaving the Cape of Good Hope on the 18th November were found to be correct.

Dec. 1854:—Capt. Rees, of the *Lincluden Castle*, gives the following account:—

Dec. 4th, at 8 A. M., fine clear morning, to my great astonishment, we discovered something very like an island. At 10 A. M. we passed within three miles of a rocky island, apparently about four or five miles in circumference, and 400 to 500 feet high. Detached from the island, about a mile to the westward, stood a high rock, in the shape of a sugar-loaf, higher than the island. I could see it plainly from the poop, 18 miles distant. The position of the island by good observations is lat. 53° 2′ S., long. 72° 50′ E. I named it Gray Island.

When abreast of this island, high land was discovered to the S.E., covered with snow, the highest peak capped with clouds. At noon we were within seven or eight miles of the N.W. point; from this point the land trended to the S.W. as far as I could see; the land high and bold. We sailed along the north side two hours and a-half at the rate of ten knots. In passing along the north side, I saw an opening between two high hills, very like a fine harbour; there appeared a good bay outside, only open to N.W. winds. We passed two rocky islands, about six or seven miles from the large one, apparently quite barren. The large island presented a magnificent spectacle; the sun shone brilliantly on its snow covering, and its highest peak seemed lost in the clouds. I could see the high land plainly at sun down, 50 miles distant. Lat. of N.W. end 53° 2′ S., long. 73° 20′ E. Lat. of S.E. end 53° 12′, long. 73° 50′. I named this Dunn Island.

These islands would appear to have become, shortly after their discovery, the resort of whalers, as we learn from the Mauritius *Commercial Gazette*, that Captain Rogers having received intimation concerning them, proceeded from Kerguelan Island, as soon as the season would permit, in the ship *Corinthian*, to the neighbourhood, and found land, but whether a continent, or island, he could not tell; however, he returned to Kerguelan, and having procured tenders, again started for this new land. Arrived there with the *Corinthian*, *Atlas*, and *Mechanic*, in March 1855, sending Captain Brown, of the *Atlas*, on shore to look for a harbour. Captain Rogers at the same time sailed under easy canvass along the land, making his observations upon the coast. Finally they discovered a small creek in lat. (according to Captain Rogers, a good observer) 53° 00′ S., long. 72° 31′ E. —Captain Church says it is in long., according to his chronometer, 73° 00′. Captain Rogers states, on looking from a small promontory, he saw at once elephants and sea leopards enough to fill 100,000 barrels with oil.

Capt. Rogers sailed along the N.E. side of this island, about thirty miles, and discovered one small harbour, where he anchored

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the *Atlas* and *Corinthian*; but it seems to be an unsafe harbour. He laid ten days, he says, in great danger with a S.E. gale blowing.

A reef of rocks West by North, true bearings forty to forty-two miles from the N.E. end of the land.

The mainland itself seems to be covered with ice and perpetual snow, and can only become a whaling station, as there is not a blade of grass to be seen during the height of summer.

January 27th 1855:—Capt. Meyer, of the *La Rochelle*, from Hamburg, is the next party who reports the discovery of islands hereabout, and gives the lat. 53° 9′ S., long. 72° 14′ E. (Meyer Island of the Admiralty Charts), and

February 1858:—Lastly we have Capt. Cubins, of the *Caribou*, making the north extreme of one of the islands in lat. 53° 1′ S., long. 73° 7′ E., and giving the following description:—

On February 22nd, wind westerly, brisk gale with snow squalls; at 10.33 a.m., in a clear between the squalls, I fancied I saw land to the southward; took in studding-sails, shortened sail, and stood towords it. At 1.30 p.m. hove to abreast an island, with the centre bearing S.S.W., about 12 miles; lowered a lifeboat, and sent her to the land. I afterwards stood in to about nine miles off shore, and got no ground with 120 fathoms of line. The island appeared to be in a S.E. and N.W. direction, about 25 miles, its southern extreme trending to the S.W., forming a deep bight on its western side, which was entirely snow-clad, and gave it the appearance of a great barrier of ice. The greater part of the island was covered with snow; there was a remarkable group of high rocks lying off to the N.E. from the S.E. part of the island, apparently six or seven miles and on the N.W. extreme an iceberg aground. The island was cloud-capped, but I think that its greatest elevation could not be less than 450 feet above the level of the sea. While hove to, awaiting our boat's return, I was astonished to see vessels at anchor in a bay, we having opened it through drifting to the S.E. One of the vessels got under way, when I stood towards it; it proved to be the American schooner *Oxford*, of Fairhaven. They put out a boat, and the master came on board; he told me they called it Kurds Island, and that it was discovered by them 18 months before. He seemed annoyed that my boat had landed, and advised me to go and leave her behind, saying, she would never return; but I told him I would never leave her while I had another boat to seek for her. I was very anxious, for it was then sundown, and darkness coming on fast; but while speaking, the lookout at the mast head reported the boat in sight. He then became more communicative, and told me they were after oil; that the shores of the island swarmed with sea elephants; and that they had sent to America from the island since the discovery 25,000 barrels of oil. The island was bold on the N.E. side, and no hidden dangers; and the bay where the vessls lay was a fine bay, or natural harbour, with good anchorage; no sunken dangers, with 12 to 20 fathoms all over, and sheltered from all winds except a north-easterly, with a fine river of fresh water at the head of it. He

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also told me that there was another island west of Kurds, distance some 30 miles, and another E. S. E. 70 miles, both of which he had seen, but never landed on them. My own officers that went in the boat confirmed his statement of the sea elephants, and of the island being well watered; there were penguins and other birds in myriads, and on an island about a mile apart from the main, appeared to be a great mound of guano. Whilst lying to I went to look at my abstract, and it made me shudder to think, that only twelve months before, I ran past the island at midnight in a heavy gale of wind, not more than four or five miles distant, ignorant of its existence. My greatest wish on sending my boat to the island was to find out if there were any shipwrecked persons on it, whom I might relieve. It was entirely of volcanic origin, my officers having found the surface composed of ashes. I made the northern extreme of the island in lat. 53.1 S., long. 73.7 E. —good chronometers.

From these accounts, we come to the following conclusion; that there can be no doubt the observations of Captains McDonald, Hutton, Rees, Rogers and Cubins, refer to the same group of islands, viz.— the Young and McDonald Islands of the Admiralty Charts; and though the *description* given by Captain Attwaye coincides in a great degree with those of Captains Hutton and Rees, still the *difference of position* requires a few remarks.

(To be continued.)

NAUTICAL NOTES.

W. Coast of N. America—South Farallon Islet, San Francisco:—It is difficult to imagine a more desolate and barren islet than the South Farallon. It is the out-crop of an immense dyke of granite, which appears to run in the direction of the coast, cropping out again at Point Reyes and at Monterey. The island rises to the height of about 300 feet, presenting to the eye a mass of broken and jagged rocks, on which no vegetation exists, excepting a few stunted weeds. The rocks present sharp angular fragments, which, being detached by the operations of natural causes, roll down upon the level parts of the island, covering the ground with irregular boulders. The nature of the rock is such, that the whole could be separated into small fragments by a pick, or crowbar. The length of the island, from east to west, is nearly a mile. The lighthouse stands on the highest peak, near the north end, and the top of the tower is 330 feet above high water level.

W. Coast of N. America—Bodega Bay:—Bodega Bay occupies an important position, though it is quite shallow, excepting in the main channel. Vessels generally lie about half-a-mile from the entrance, and receive the produce of the country in lighters.

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These are loaded at what is called the *port*, and from thence floated down to the vessels with the tide. The distance from the *port* to the anchorage is about 1½ miles.

The country in the vicinity of Bodega is very productive, both in the valleys and on the hills which border the bay. A tract of fine agricultural country stretches behind the hill range, extending north towards Russian River and Petaluma.

Riding from the bay towards the State prison, I was surprised at the extent and excellence of the agricultural lands.

Bodega Bay must necessarily become an important shipping port for produce, though it is rapidly encroached on, and must ultimately present only a navigable creek, surrounded by marsh.

Large quantities of potatoes are raised in the neighbourhood, and hauled to the port in waggons drawn by five or six pairs of oxen. This article (cultivated at Bodega) commands a high price in the San Francisco market, being estimated above all raised elsewhere. Wheat, oats, and barley are also produced in great abundance.

Disturbance of the Compass near Cape Injeh, Black Sea—*Caution to Mariners*:—In March last the Austrian steamer, *Trebizonda*, grounded on a sandbank, to the eastward of Cape Injeh, near Sinope, and was got off again with some difficulty. The Captain believing his compass to be more in error than he had estimated, watched it as he increased his distance from the spot where he had taken the ground, and found that the amount of deviation considerably lessened, ultimately resuming its proper indication. A similar effect was subsequently observed on the compasses of the Turkish steamer, *Astrologer*, and of the French ship, *Henri IV.* The Turkish authorities then ordered a brig to make some experiments on the subject, when it appeared that a deviation of the compass was found to take place along the coast, within a range of 30 miles, of which Cape Injeh is the centre. On investigating the cause of this derangement of the compass, a large mass of highly ferruginous rock was discovered, commencing a short distance from Sinope.

REWARDS AND TESTIMONIALS.

The following Rewards for saving life at sea have been awarded by the Board of Trade :—

A Telescope to **Captain Taylor,** of the *Hemisphere*, of New York, who bore down to the assistance of the master and crew of the *Londonderry*, of Irvine, who had been exposed for four days in the ship's boat, after having abandoned their vessel on the 28th January last, in lat. 23° 41′ N. long. 50° 41′ W. They were ultimately landed at Mobile, after being clothed and receiving every attention from Captain Taylor, which their distressed condition required.

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A Telescope to **Capt. Frederick A. Small,** of the U. S. schooner *Sahwah*, for his kind treatment of the crew of the brigantine *Halifax*, of Halifax, N. S., who had been obliged to abandon their vessel on a voyage from Porto Rico to New York, at which port they were landed on the 22nd March last.

A Telescope to **Capt. Frederick Christopher,** of the Bremen brig *Mazeppa*, for his humane conduct towards the mate and six of the crew of the barque *Londonderry*, of Irvine, whom he picked up at sea on the 2nd February, their vessel having foundered on the 28th January last, whilst on a voyage from Demerara to Queenstown.

A Telescope to **Capt. Meyers,** of the brig *Delphin*, of Lubeck, for the kind assistance and treatment shewn by him to the master and crew of the *Martha*, of Brixham, when that vessel became waterlogged on the 5th January 1858.

A sextant to **Capt. Michele Russovich,** of the *Maria*, of Trieste, for his humane conduct towards the master and crew of the *Eliza Carrew*, of Cape Town, Cape of Good Hope, when that vessel had become waterlogged in February last, in lat. 46° 20′ N., long. 13° W.

CERTIFICATES CANCELLED.

At a Meeting of the Local Marine Board for the Port of London, held on the 1st April, charges of drunkenness and neglect of duty were preferred by Mr. James Barnett, owner of the brig *Skerryvore*, against William Dobbie Stanley, master of the said vessel, during a voyage from London to Algoa Bay, thence trading to Mauritius and back, and finally to London. The charges of drunkenness and gross misconduct having been fully proved, the Board of Trade have directed that his Certificate of Competency, No. 5,297, shall be Cancelled.

Lewis Davis, mate of the brig *Arve*, of Hartlepool, was charged at the Liverpool Police Court, on the 15th April, with deserting the said vessel, and sentenced to ten weeks imprisonment with hard labour The above having been represented to the Board of Trade, their Lordships have directed that his Certificate of Service, No. 72,361, shall be Cancelled.

At a Meeting of the Local Marine Board for the port of Liverpool, held on the 10th April, an investigation was held into the conduct of William M'Myn, late mate of the *Osprey*, of Liverpool, upon charges of gross acts of drunkenness, and other misconduct, preferred against him by Alexander Morris, late master of the said ship. The charge of drunkenness having been fully proved, the Board of Trade have directed that, his Certificate of Service, No. 64,471, should be Cancelled.

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Peter Annand Sellar, mate of the ship *Excelsior*, was charged at the Thames Police Court, on the 30th April, with stealing 150 pounds of rope, the property of the owner of the said ship, and sentenced to six weeks imprisonment with hard labour. The above having been represented to the Board of Trade, their Lordships have directed that his Certificate of Competency, No. 4,865, shall be Cancelled.

On the 14th May, William Lakey, late master and part owner of the *Clipper*, of Dartmouth, was indicted at the Central Criminal Court, for feloniously scuttling the said ship, on the 14th March last, with intent to defraud the Underwriters, of which offence he was found guilty, and sentenced to eight years penal servitude. In consequence of this conviction, the Board of Trade have directed that the Certificate of Service, No. 43,377, belonging to the said William Lakey, should be Cancelled, under the provisions of the Merchant Shipping Act, sec. 242.

CERTIFICATES SUSPENDED.

John Wallace, mate of the *Elizabeth*, of Scarborough, was tried at the petty sessions held in the borough of South Shields, on the 15th April, for stealing one hundred weight of rope, the property of the owners of said ship, and committed to Durham for one month's imprisonment with hard labour. The above having been represented to the Board of Trade —their lordships have directed that his Certificate of Service, No. 48,445, shall be suspended for Six Months.

A meeting of the Local Marine Board of the port of London was held on the 29th April, and adjourned to the 6th May, to investigate charges of gross immorality, misconduct, and embezzlement of ship's stores, preferred by Mr. Emanuel Young, owner of the *Protomelia*, against Edwin Hill, master of that ship, during a voyage from London to Callao, and back to this port. The Local Marine Board having reported that the said Edwin Hill had been found guilty of gross misconduct—the Board of Trade have been pleased to direct, that his Certificate of Competency, No. 11,058, be suspended for three months.

ROCKS AND SHOALS.

Indian Ocean—Reefs and other Dangers discovered in the Eastern Archipelago during the year 1857:—

West Coast of Sumatra:—A Coral Reef, about four cables' in circumference and 2½ fathoms water on it, has been discovered by Lieutenant P. van Bleiswijk Ris, of the Royal Dutch Navy, with Goenoeng Karakara bearing N.E. ⅝ N.; the east extreme of Pinie Island S. ⅛ W.; and Goenoeng Laboeanloeloe E.S.E. ⅓ E. Discoloured water was distinctly seen about a mile distant to the N.E. of this reef.

Two Reefs were also found by Lieut. H. A. Modderman, of the Royal Dutch Navy. From the first, in lat. 0° 30′ N., long. 98° 48′ E., Karakara bore E.N.E. ⅓ E and Oedj Toean S.E. ⅝ E. The other was discovered by heavy rollers on it and was named Karang Lawé; its position is in about lat. 0° 52′ N., long. 98° 22′ E.

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BANCA STRAIT.—A Coral Reef, about 3 miles in circumference, and probably only 6 feet water on it, was reported by the Netherlands barque "*Banka*," lying 15 miles from the south end of Banca Island. Its position is in lat. 3° 21′ S., long. 106° 41′ E., and the land in sight (probably St. Paul's Mount, 930 feet high) bore N.N.W.

A SHOAL, carrying a depth of only 8 or 9 feet, over soft mud, was found in Banca Strait, by the steam vessel "*Koningin der Nederlanden*," Lalarie point bearing S.E. by E. distant 2 miles.*

* See Admiralty Chart of Gaspar and Banca Straits, on which these dangers are inserted, No. 2,149.

GASPAR STRAIT:—The master of the Netherlands barque, "*Laura en Adele*," when proceeding through Stolze Channel, observed that the Reef surrounding Kasenga, the north-western-most of the Six Islands, extended a mile from its north-west side, and that a part of it, about the size of the island, was dry at low water.†

† See Admiralty Plan of Gaspar Strait, on which this danger is marked, No. 2,137.

CARIMATA STRAIT:—Mr. Rodgers, master of an English ship, discovered a Shoal with probably less than 4 fathoms water on it, the east point of Carimata Island bearing S. ½ W., and the Leema Islands W.N.W. ½ N.‡

‡ See Admiralty Chart of Carimata Strait, on which this shoal is marked, No. 2,160.

RHIO STRAIT;—According to the report of Lieut. J. van Maurik, of the Royal Dutch Navy, the eastern point of the Irene Bank, and the western point of the Bank around Tercoli Island extends farther out than marked in former charts. The steep edge of the Irene Bank lies with Radjo Point bearing N.E. ¼ N.; the south extreme of Tercoli, E.S.E. ½ S., and the north extreme E. ¾ S. The depth was 3 fathoms at high water, with Radjo Point bearing N. by E. ¾ E. and north extreme of Tercoli E.N.E. ¾ E.§

§ See Admiralty Chart of Singapore, Durian, and Rhio Straits, No. 1,336.

CHINA SEA:—The Netherlands Schooner "*Admiraal van Stellingwerf*," was lost on a Reef in lat. 0° 36½′ N., long. 105° 4½′ E. Another Reef was seen to the eastward.

Bearings Magnetic. Var. 1° 15′ *East in* 1858.

N. Atlantic—The Three Chimnies:—Capt. Cowans, of the *Cherokee*, from Trinidad, reports as follows: April 20th, lat. 47° 50′ N; long. 28° 40′ W. I have now crossed this position, or very near it, on four voyages, without seeing the Three Chimnies, as laid down on several Charts, but I have remarked large flocks of birds every time. I may also add that it was always daylight when I happened to be near this place. May there not be a Shoal hereabouts, which may render caution necessary in approaching it.

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N. Atlantic:—Capt. T. H. Chaderton, of the *Salween*, from Caldera, says: April 20th, I passed in lat. 44° 56′ N., long. 23° 51′ W., a reef of rocks just covered by water. Owing to the strong breeze blowing at the time, I was unable to make further observations. [This is situated about N.E. by E.$\frac{1}{2}$E. dist. 30 miles from a Shoal (marked × 1830) on the Admiralty N. Atlantic Chart, in lat. 44° 43′ N., long 24° 30′ W. It may be the same Shoal if any such danger exists near this position.—*Ed. M. M. Mag*,

Australia—Bass Strait—Cape Frankland Rock, Flinder's Island:—Captain Denham, of H. M. Surveying vessel *Herald*, has reported that the Rock hitherto placed in the Admiralty Charts, at 2 miles to the westward of Cape Frankland, on the north-west side of Flinders Island, at the eastern entrance of Bass Strait, is found to be upwards of four miles in the same direction from the Cape.

The rock, which is awash at half tide, and shows 5 feet above low water, lies in lat. 39° 52′ 2″ S.; long. 147° 41′ 11″ East of Greenwich, with Cape Frankland E. by N. easterly, 4$\frac{1}{3}$ miles, and the hill (513 feet) on the north part of Hummock Island, S.E. $\frac{1}{2}$ S., nearly 11 miles. It is about 10 yards in diameter, steep-to on the seaward side, but having a projection to the eastward for nearly one-third of a mile, with 5 and 6 fathoms over it, from the extremity of which the weed rises to within two fathoms of the surface.

Sister Islands apparently open a sail's breadth of Flinders Island, bearing N.E., lead outside the rock; and Chappell Island Mount, its breadth open of Hummock Island, S.E. by S., leads through the fair-way between the rock and Cape Frankland.

Bearings Magnetic. Var. 10° *East* 1858.

Atlantic—Coast of Spain—Shoal in Arosa Bay:—A Shoal has been discovered off Barbafeita Point, Island of Arosa, in Arosa Bay, Finisterre.

The Shoal, which is about 20 yards in diameter, with an irregular surface, and a least depth of 12 feet upon it at low water springs, lies with Barbafeita Point S. by E. easterly, 3 cables' lengths; Campelo Point E. by S., and the outermost point of Pedregosa Island S.W. by W.

It is steep-to on the outside, and there are 4$\frac{1}{2}$ and 5 fathoms between it and Barbafeita Point.

Bearings Magnetic:—Var. 23° *West in* 1858.

N. Pacific Ocean:—Captain Akin, of the *Winthrop*, reports, a shoal, or reef, a mile long, in a N. E. and S. W. direction, in lat. 20° 37′ N., long. 131° 2′ E. of Greenwich.—Water smooth, weather fine at the time, and there were but few breakers on the shoal. The reckoning was correct on making the Bonin Islands a few days after.—*Honolulu Friend, March* 3.

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N. Pacific:—Captain Morse, of the *Morning Star* (American), in his last Pacific voyage, states that he sailed over the positions of the following islands, marked as doubtful on the charts:—St. Bartholomeo, lat. 15° 25′ N., long. 164 E.; Wilson Island, lat. 19° N., 166° 45′ W. He also states having visited a small island in the Rurick Chain not given on the charts, but he does not furnish the particulars of the position.

CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from April 25th to May 25th, 1858.

Australia — S. Coast — Fixed Lights in King George Sound:—A Light has been established on Breaksea Island, at the entrance of King George Sound, on the S. Coast of Western Australia.

It is a Fixed White Light, placed at an elevation of 384 feet above the sea at high water, illuminating all round the compass, and visible in clear weather from a distance of 25 miles seaward between Bald Head and Cape Vancouver, the foot of Mount Gardner, or the bearings E. by N. and S. W. $\frac{1}{4}$ W.

The light-tower is of iron, rising from the centre of the keeper's dwelling, and the whole 43 feet high. It stands on the summit of the island, 1200 yards within its eastern extremity, in lat. 35° 4′ 18″ S. long. 118° 3′ 20″ E. of Greenwich.

Caution.—When approaching King George Sound from the westward, the mariner is cautioned that although the Light may be occasionally seen, it does not become fairly open until bearing N. E. $\frac{1}{4}$ N.; and it should not be steered for until bearing N. N. E. $\frac{3}{4}$ E., when the vessel will be to the eastward of the Maude and Vancouver Reefs. The Light also will be hidden to a vessel passing north of Michaelmas Island.

Australia—S. Coast—King George Sound—Fixed Light at Princess Royal Harbour:—A *harbour* Light has also been exhibited from Point King, the northern bluff of the narrow entrance to Princess Royal harbour, King George Sound.

This Light is Fixed, White, 37 feet above high water, and should be visible in clear weather, through the approaches to the harbour, from a distance of 10 miles.

The Lighthouse is a small wooden square tower, 17 feet high, with the keeper's dwelling attached, and presents the appearance of a cottage. It stands on the edge of the point, W. N. W. $\frac{1}{4}$ W., $7\frac{1}{4}$ miles from Breaksea Island lighthouse, and in lat. 35° 2′ 35″ S., long. 117° 55′ 12″ E. of Greenwich.

Bearings magnetic. Variation $5\frac{3}{4}$° *W. in* 1858.

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Mediterranean—Lights in the Dardanelles: The following Lights have been established in the Dardanelles:—

Fixed Green Lights at Kilid Bahr:—Two *harbour* Lights at the fort of Namazieh, on the point close to the southward of Kilid Bahr, or the Inner castle of Europe, in the Narrows of the Dardanelles.

They are Fixed Green Lights, placed vertically at the respective heights of 36 feet and 20 feet above the sea, and should be visible in clear weather from a distance of 4 miles.

Fixed Red Lights at Chanak Kaleh-si:—Two *harbour* Lights on the low battery of Chanak Kaleh-si, or the Inner castle of Asia, on the western side of the town of Chanak, or Dardanelles.

They are Fixed Red Lights, vertical, the higher at an elevation of 66 feet and the lower 46 feet above the sea, and visible at a distance of 4 miles in clear weather.

Fixed Light with Flashes at Point Nagara:—A Light on the tower of Nagara Kaleh-si, or castle, on the point of the same name, on the Asiatic shore of the Strait, and 3 miles to the northward of Chanak.

It is a Fixed Red Light, varied by *flashes* preceded and followed by short *eclipses*, placed at an elevation of 39 feet above the sea, and should be visible in clear weather at the distance of 10 miles; but the eclipses do not become total within a distance of 5 miles.

Fixed Green Lights at Bovali Kaleh-si:—Two *harbour* Lights at the fort of Bovali, near the water's edge on the European shore of the Strait, N. N. W. $\frac{3}{4}$ W., $1\frac{1}{4}$ miles from Nagara Kaleh-si.

They are Fixed Green Lights, vertical, placed respectively at an elevation of 46 feet and 26 feet above the sea, and they should be seen in clear weather from a distance of 4 miles.

Fixed Green Lights at Galata:—Two *harbour* Lights at a point near the mouth of a small stream, $1\frac{1}{2}$ miles to the south-east of the village of Galata, on the European shore.

They are Fixed Green Lights, exhibited vertically, at the respective heights of 62 feet and 42 feet above the sea, and visible 4 miles distant in clear weather.

Caution.—The bank fronting the above-mentioned stream has been found to extend 2 cables lengths farther out than hitherto indicated by the charts, or one-third of a mile off the shore.

Fixed Red Lights at Point Chardakh:—Two *harbour* Lights, on the low sandy point of Chardakh, or Khardi, N. N. E. $2\frac{2}{3}$ miles from the town of Lampsaki, on the Asiatic coast.

They are Fixed Red Lights, and placed vertically, the higher 59 feet and lower 39 feet above the sea, and they should be visible in clear weather at a distance of 4 miles.

Bearings magnetic. Variation 8° *W. in* 1858.

West Indies—Coast of Guiana—Change in position of Surinam Light Vessel:—With reference to a Notice respecting this Light (*Mer. Mar. Mag.* April 1858, p. 126) it has

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been found necessary to move the Light-vessel recently placed at the entrance of the River Surinam farther out, North, 4 English miles; and she now lies in 4 fathoms at low water, with Bram point bearing S.S.E. ½ E., distant 9 miles. Eastern extreme of land, E.S.E. ⅝ E. Outer Buoy, South, westerly.

Approaching from the eastward in 4 fathoms along the coast, in clear weather, the Light will be seen; but in coming from the northward, soundings of 4 fathoms will be obtained for some time before sighting it.

Bearings magnetic: *Variation* 1° 45′ E. in 1858.

Mediterranean — Coast of Spain — Fixed Light with Flashes on Cape Salou:—On and after the 1st April 1858, a Light would be exhibited from the Lighthouse recently erected on Cape Salou, in the Province of Tarragona, Catalonia.

It is a Fixed White Light, varied by *flashes* every 4 minutes, placed at an elevation of 141 English feet above the level of the sea, and should be visible in clear weather from the deck of a vessel 15 miles distant.

The Lighthouse consists of a rectangular building, from the centre of which rises a circular tower in two portions, the lower being 16 feet, and the upper 11 feet in diameter; this is surmounted by a lantern, and the whole is 38 feet in height. The lower part of the structure is coloured Yellow; the tower is of the natural blueish colour of the stone of which it is built, and the lantern is White. It stands upon a rock close to the seashore, in lat. 41° 3′ 52″ N., long. 1° 9′ 36″ E. of Greenwich,

Atlantic—United States—Fixed Light on Roanoke Marshes:—On and after the 15th April 1858, a Light would be exhibited from a Lighthouse recently erected on Roanoke Marshes, between Albemarle and Pamlico sounds, North Carolina.

It is a Fixed White Light, placed at an elevation of 34 feet above the water, and should be visible in ordinary weather from the deck of a vessel, at a distance of 10 miles.

The Lighthouse is a wooden hexagonal structure erected on iron piles, and painted White, with the lantern Red. It stands in 4 feet water, about midway on the east side of the narrow channel connecting Pamlico and Croatan sounds, and within 50 yards of the low-water mark on Jackson or Caldwell Island.

England—S. Coast—Lighthouse on the Needles Rocks:—On or about the 1st of January 1859, a Light will be exhibited from the Lighthouse in course of erection on the outer of the Needles Rocks, at the western extremity of the Isle of Wight; *when the* Light *at present shewn from the tower on the cliff will be discontinued*

The Light will be Fixed, and appear as a Red Light from S.E. ½ S.,

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round westward to N.E. by E. ½ E., excepting between W. ¾ N., and N.W. by W. ¼ W., in which direction it will show White. It will be placed at an elevation of 80 feet above the level of the sea at high water.

Directions.—The mariner is to observe that the southern limit of the White Light leads 2 miles to the southward of Durlston Head, in a depth of 14 fathoms, and the direction of its northern limit clears the Dolphin bank and S.W. tail of the Shingles in 4 and 5 fathoms respectively.

Bearings magnetic:—Variation 22½° W. in 1858.

Ireland—S. Coast—Fixed Light in Dungarvan Bay:—On and after the 1st of July 1858, a *Harbour* Light will be exhibited all night from the Lighthouse recently erected on Ballinacourty point, on the northern side of Dungarvan Bay, S. coast of Ireland.

The Light will be Fixed, and visible between the bearings, from a vessel, of West and S.E. ¾ S. It will show *Green* bearing from West to N.W. by W., and *Red* in the direction of Carrickapane Rock, but in all other directions it will be *White*. The Light will be placed at an elevation of 52 feet above the level of the sea at high water, and its White appearance should be seen from seaward at a distance of about 10 miles in clear weather.

The Light-tower is circular, of light gray limestone, 44 feet in height, and stands in lat. 52° 4′ 27″ N.; long. 7° 33′ 5″ W. of Greenwich, with Helvick Head S. ½ W. 1½ miles; Carrickapane Rock S.S.E. 9 cables' lengths; and Whitehouse Spit W. by N. 3½ cables' lengths.

Directions.—The Intermittent Light on Mine Head, S.W. by W. 4 miles from Helvick Head, marks the approach from the westward to Dungarvan Bay, and can be seen farther eastward than the range of Dungarvan harbour Light.

A Vessel in the entrance of Dungarvan Bay must keep clear of the Red colour of the Light to avoid Carrickapane Rock; and on the northern side of the Bay keep to the southward of the Green Light to avoid Carricknagaddy and the rocks which extend half a mile eastward of Ballinacourty Point.

Ireland—E. Coast—Buoy on Butter Pladdy Shoal:—A Black nun-Buoy has been moored off the western extremity of the Butter Pladdy Shoal, about 2 miles south-west of the South Rock Lighthouse, East Coast of Ireland.

This Buoy, which is placed as a guide to vessels taking the Channel between the Butter Pladdy and the Main, lies in 5 fathoms at low water, with South Rock Lighthouse N.E. ¾ E.; North Rock Beacon N.E. ¼ N.; Kerney Point, North; and St. Patrick Rocks perch S.W. by W.

Bearings magnetic:—Variation 25½° W. in 1858.

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Baltic — Coast of Prussia — Fixed Light at Swinemunde:—A Light is exhibited from the Lighthouse recently erected on the eastern side of the harbour of Swinemünde, or port of Stettin, at the mouth of the River Oder, in the Baltic Sea.

It is a Fixed White Light, placed at an elevation of 211 feet above the sea, and visible from E. by S. round northerly to S. by W. It should be seen in ordinary weather from the deck of a vessel at a distance of 21 miles.

The light-tower is built of yellow brick, and is a prominent landmark from the offing. It bears due south, distant rather more than a mile from the harbour Light on the east mole-head, and stands in lat. 53° 54′ 59″ N., long. 14° 17′ 38″ E. of Greenwich.

Directions. When the state of the weather prevents Pilots from going to sea, and yet it is possible for vessels to enter the harbour of Swinemünde, if desirable to attempt it, a Red Flag will be hoisted on the Signal beacon on the eastern harbour pier.

In this case the new lighthouse must be steered for, bearing S. by E., which will lead to the outermost Black and White striped Buoy (called a roads buoy) at a distance of nearly a mile from the east pier head. From this the two Beacons, one in the middle of the east pier and the other on the eastern downs or sand hills, will appear in line about S.S.E., and kept so, will lead the vessel into the harbour, along the pier at half a cable off (leaving all White Buoys on the starboard hand), as far as the second lighter bridge of the east pier, at 4 cables' length above the Lantern Beacon.

At this point, where the vessel must be kept a little to the southward with the least possible headway, the pilot-boat will be in attendance with the Pilot.

Should the Buoys have been carried away or removed owing to the lateness of the season, the vessel's course will be directed by the Red Flag from the signal beacon being inclined pointing towards the side to which she is to steer, and when the Flag is kept upright the course is not to be altered.

Should there be no pilot-boat out, and the Red Flag is not hoisted on the signal beacon, the vessel must not attempt the port, but continue at sea.

Bearings magnetic: Variation 14¼ *West in* 1858.

Australia—Bass Strait—Flashing Light on Cape Schanck:—A Lighthouse is in course of erection on Cape Schanck, the southern extremity of the peninsula separating Port Phillip from Port Western, on the S. coast of Australia.

The Light will be Fixed, White, varied by short *eclipses*, placed at an elevation of 328 feet above the sea, and should be visible in clear weather at a distance of 23 miles.

The Light will probably be exhibited early in the year 1859.

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Australia—Bass Strait—Fixed Light on Wilson Promontory:—A Light will be established on Wilson Promontory, the southermost point of the Australian continent, Bass Strait.

The Light will be Fixed, White, placed at 324 feet above the level of the sea, and should be visible from a distance af about 20 miles in clear weather.

It will probably be exhibited early in the year 1859.

Atlantic—Coast of Spain—Fixed Light with Flashes on Cape Busto:—On and after the 1st of April 1858, a Light would be exhibited from a Lighthouse on Cape Busto, Bay of Biscay, in the province of Oviedo, Asturias.

It is a Fixed White Light, varied by Red Flashes every 2 minutes, placed at an elevation of 311 English feet above the level of the sea, and should be visible in clear weather from a distance of 12 miles.

The Lighthouse consists of a rectangular building with a decagon tower rising from the centre, and the whole is coloured White. It stands on the extreme point of the Cape, in lat. 43° 36′ 10″ N., long. 6° 28′ 48″ E. of Greenwich, according to the latest Spanish position given.

North Atlantic—Bay of Chaleur—*Error in Description of the Colour of the Light on* BIRCH POINT:—In the May Number of the *Magazine*, the Light on the N.E. end (Birch Point) of Miscou Island, S. side of the Bay of Chaleur, is described as *Bright*. The Light is RED, and the Lighthouse WHITE.

Pacific Ocean—Oregon—Buoyage of Umpqua River:—Two nun-Buoys, painted with Black and White perpendicular stripes, have been placed in line with the Lighthouse, which bears from them E. by N.¼ N. by compass. The *inner* Buoy is just within the bar, in 3½ fathoms at mean low water, and can be passed on either hand, but only close to. The *outer* Buoy is just outside the bar, in 10 fathoms at the same state of the tide, and can also be passed on either hand. By keeping the two Buoys in range with the Lighthouse, a depth of 14 feet may be carried over the bar at mean low water.

Atlantic—United States—Cape Hatteras Beacon Light:—In consequence of the encroachments of the sea, the Cape Hatteras *Beacon* Light has been removed to a position 500 yards from the extremity of the point on which it formerly stood.

W. Indies—Island of Cuba—Buoyage of the Harbour of Jagua or Cienfuegos:—The entrance to this Harbour has been Buoyed in the following manner:—

1. A White Buoy at one cable's length from the eastern and 4 cables' length from the western coast, and indicating the Channel.

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It is moored in 18 fathoms of water, stony bottom, with Point del Diablo bearing S.E. 5° E.; Point la Vigia S.W., and the Fort N.W. ¼ N.

2. A White Buoy, at about a cable's length from the shore on either side, and 5 cables' length from the first Buoy. In 23 fathoms on stones, with Point del Diablo bearing S.E.; Point la Vigia S.S.E., and the Fort N.W.

3. A Red Buoy, at one cable's length from the shore, and 3 cables' length from the second Buoy. In a depth of 18 fathoms on stones, with Point Paso Caballos bearing E. N.E.; Point la Milpa N.N.E., and the Fort N.E.

4. A Red Buoy, at one mile from the shore, and 2 miles from the third Buoy. In 25 fathoms, mud, with Cayo Carena bearing North; Point la Milpa, N.N.E., and Point Caleton de las Damas, East.

A Pilot is always in attendance near the first Buoy, and vessels may tack between the Buoys, there being plenty of water and no danger.

NEW BOOKS.

THE NEW ADMIRALTY REGULATIONS RESPECTING SEA LIGHTS AND FOG SIGNALS. By FREDERIC THOMAS PHATT, D.C.L. Advocate, Doctors' Commons. London: V. & R. Stevens. Price 1s. 6d.

THE SEA OFFICER'S MANUAL, being a Compendium of the Duties of a Commander; First, Second, Third, and Fourth Officer; Officer of the Watch; and Midshipman; the Mercantile Navy. By Capt. A. PARISH, of the E. I. Merchant Service, and late of the H. E. I. C. S. London: Smith, Elder & Co., 65, Cornhill Price 5s.

A *Sea Officer's Manual*, written by a professional man of reputation and experience in the Service, ought to be peculiarly instructive. Such is the case with the little work before us: on looking carefully through it, we can truly say, Capt. Parish has put a vast amount of useful matter into a very small compass, and it might justly take rank as the "Regulations" for our first-class ships. We do not wish it to be inferred, from these remarks, that the Manual is not suited to the Officers of the Mercantile Navy generally—far from it—we agree with Capt. Parish that the system of discipline, and the mode of carrying on duty he advocates, will be conducive to the efficiency and comfort of any ship, and certainly tend to raise the tone of the Merchant Service.

ON THE TIDES AND TIDAL CURRENTS OF THE IRISH SEA AND ENGLISH CHANNEL, being the substance of a Lecture delivered at the Sailor's Home, Liverpool, by the Rev. SAMUEL HAUGHTON, M.A., Fellow of Trinity College, Dublin. Liverpool: W. Jewitt & Co., 39, South Castle Street. Price 4s.

Our limited space will only admit of our calling attention to this

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excellent little treatise, illustrated by charts and diagrams, which has been prepared with the view of giving the Seaman a general idea of the nature of the Tides, and in order to increase the practical utility of the Admiralty "Tide Tables." The Mariner who makes himself master of the contents of this volume, will find it to his advantage in navigating the British Seas. The Appendix contains numerous carefully constructed examples for the use of Masters and Mates intending to pass the examination in Tides before the Local Marine Boards.

HYDROGRAPHIC NOTICES PUBLISHED BY THE ADMIRALTY	s.	d.
ARCHIPELAGO (No. 4)	0	3
AUSTRALIA, S. COAST (No. 1)	0	3

NEW CHARTS AND BOOKS.

Published by the Hydrographic Office, Admiralty, in May 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
E. Coast of England.—Tees Bay. Corrected to 1858 by E. K. Calver, Esq. R.N.	3	0
Mouth of the Maas River.—Corrected to 1858	2	0
Mediterranean.—Candia Island, Eastern part. Capt. T. Spratt, R.N. C.B. 1857	3	0
Mediterranean.—Leghorn. Corrected to 1858	2	6
S. America.—Rio de Janeiro, with Views. Corrected to 1857. Various authorities	2	6
West Indies.—Sheet 10. Corrected to 1858	2	0
West Indies.—Pearl Cays. Corrected to 1858.	1	6
W. Coast N. America.—Diego Bay to Vancouver Island. Capt. Kellett, R.N., C.B. and U. States Survey 1855. 2 sheets. each	3	0
S. E. Coast of Africa.—St. John or Umzimvubu River entrance. F. Skead, Esq., R.N. 1857	1	0
East Indies.—Point de Galle Harbour. Capt. Sir E. Belcher, R.N., C.B. and Mr. Twynam, Master Attendant. 1858	1	6
China Sea.—Tam-sui Harbour. Corrected to 1858	1	6
New Zealand.—Cook Strait, with the Coast to Cape Egmont. Capt. Stokes and Drury, R.N. 1854	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

JULY 1858.

HURRICANE OF DECEMBER 1857, IN THE SOUTHERN INDIAN OCEAN.

On the 3rd of December 1857, the barometer, at Port Louis, commenced to fall, and the wind to blow in squalls from about E.S.E.

The barometer continuing to fall gradually, in conjunction with the increasing E.S.E. wind, made it evident that a rotatory storm was coming down upon the Island. The wind remained perfectly steady in direction, but the low state of the barometer, 29·948 at 9½ A. M. on the 5th, and 29.834 at 3½ P. M., with a force of wind of 9 lbs. on the square foot, caused the inhabitants to feel alarmed, and to take the usual precautions of closing shutters, securing buildings, etc.

At 9½ P. M. the barometer was at 29·838; at 10 P. M. the wind began to veer slightly to the southward, which shewed that the storm was taking a more southerly course, and that the centre would not pass over the Island.

The atmospheric pressure kept on decreasing rapidly during the whole night and the wind veering to the southward. The squalls were very violent, and between 5 and 6 in the morning of the 6th, with the wind due South and barometer at 29·474, the pressure per square foot during the most violent squall was 37·5 lbs. The centre of the storm was then nearest to this Island. The barometer immediately commenced to rise with rapidity, and the wind to veer to the westward and diminish in force.

The rate at which the barometer rose and the wind lessened in strength, made it evident that the storm had increased its rate of progression.

The data I have obtained from the various vessels which were more or less implicated in the revolving mass of the Hurricane, have proved this most satisfactorily.

Unfortunately, most of them were near the Island at the time, and therefore it has not been possible to trace the storm to its termi-

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nation, nor have I found out anything about it further East, than 61° East long. A few extracts from the logs of those vessels which felt it most will be interesting, and will also shew how the track, rate of progression, &c. of the Cyclone have been determined.

The earliest date at which the storm was felt, was on December 4th, on which day the brig *William & Mary* was in lat. 19°42′ S., and long. 61°39′ E. In her Commander's report, it is stated that she experienced a hurricane which lasted forty-eight hours. The wind commenced at E., with swell from N., and veered round by the N. to N. by W.

The centre consequently passed to the westward of her; she was not, however, very near it, and sustained no damage.

The French ship *Rose* suffered a good deal by this storm, the vortex having passed over her.

On the 4th of December, in lat. 22° 15′ S.; long. 59° 20′ 15″ E., the weather was squally, wind E.S.E. and E.

On the 5th of December, wind E. to E.S.E. Course northerly. Gloomy weather; 9 P. M. squally; heavy swell from northward, furled main royal.

1 A. M. furled top gallant sails.

5 A. M., the weather assumed a very bad appearance, the sea very heavy; took a reef in the topsails, clued up the jib and mainsail.

9 A. M., blowing a hurricane, close reefed topsails; 11 A. M., hove to under close reefed main topsail, fore staysail and main trysail.

Noon, lat. by obs. 19° 50′ S.; long. by obs. 59° 20′ 15″ E.

P. M., the wind increasing by degrees, and the sea getting heavier; still hove to on starboard tack under same sail. At 3 P. M. weather excessively bad, and sea cross; clued up the main topsail—shipping much water. At 4 P. M. the wind had become very high, the fore staysail was blown to pieces. At eight o'clock, barometer 29.8.

The storm was fearful, the main and fore-top gallant masts were blown away, the tenon of the fore-topmast broken, etc.

The wind so strong that the men were obliged to lash themselves on deck to prevent being blown away.

At 9 P. M. the pinnace and every thing it contained were carried away.

About half-past 11 o'clock P. M. the wind suddenly *ceased, and enormous mountains of sea were heaped up all round the vessel,* and swept almost every thing away.

Dec. 6th:—About half-past one A. M. the wind commenced to blow from S. W. with its former force, sails were torn away in pieces from the yards by the force of the wind, notwithstanding their extra lashings. The vessel laboured fearfully. The wind continued to veer to the Westward, but still without diminishing in strength. About four A.M. there was a slight diminution in the strength of the wind, and the men could walk about the decks.

Nine A. M., wind W.N.W., and gradually decreased.

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Noon, lat. 19° 50′ S.; long. 58° 33′ 15″ E.

Barometer when lowest 28.8.

The strong and increasing easterly wind with a heavy northerly swell, (and although not mentioned, but undoubtedly with a falling barometer) ought to have informed the commander of the *Rose*, that a Cyclone was raging to the north of his position, on the 4th and 5th of December. It certainly was not very judicious under the circumstances to keep on steering to the Northward, at the rate of 6, 7, and 8 miles per hour, until the force of the wind rendered it compulsory to heave to, and prevented the possibility of escape. It would have been far preferable to have scudded to the Westward.

Had this been done even at midnight on the 4th, the *Rose* would have escaped the force of the wind near the centre, and the fearful sea, which always does so much damage within it and at its edge.

The brig *Governess* suffered severely by this storm, and was abandoned at sea, in consequence of the injuries sustained; she, however, was propelled by the wind and current towards Mauritius, near which, she was boarded, and is at present in the harbour. Her log is not very detailed, and the latitude and longitude are only given on the 7th of December.

It appears, that on the midnight of the 5th, she experienced heavy squalls, wind N.E.

December 6th:—4 A.M., blowing harder from E., heavy rain, furled sails, hove to under bare poles.—8 A.M., a hurricane of wind and rain: barometer 28·30: labouring heavily.—9 A.M. the main topmast broke off at the cap, after which the foremast fell close to the deck; sea making a clean breach fore and aft, filling the decks and washing away bulwarks.

11.15, A.M., the wind veered to the Westward with a terrific sea; shipped a sea over the stern, which washed away binnacle, compass, etc., the water pouring down fore hold at parting of foremast in great quantities.—2 P.M. hard heavy gales of wind with violent gusts and rain. Barometer rising.

Noon, more moderate.

At noon next day, December 7th, lat. 20° 21′ S.; long. 58° 48′ E.

Almost the same remarks apply to the *Governess* as to the *Rose*. There seems to be a sort of fatality which compels commanders of vessels to keep on their course until they get in the front of a storm and there to heave to.

The Law of Storms is simple, and its principles can be easily acquired; it is not an abstruse subject requiring mathematical knowledge or any great depth of thought. A knowledge of it merely makes a person know, by the direction of the wind and swell, the falling or rising of the Barometer, &c., the bearing of the centre of a storm from his position; and whether he is approaching to or receding from it.

He then examines a chart and sees the average tracks of storms in the part of the world where he is, but as they vary in direction

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considerably, he begins to think for himself, and when once a storm has been avoided by the exercise of a little thought and judgment, the truth and beauty of the law become apparent, and strongly impressed upon his mind. He then ceases to ridicule what has been proved, and will always act with caution on similar occasions.

He finds out, also, that heaving to, or altering his course does not always lengthen his voyage, but that on the contrary he is certain to arrive at his destination before those who prefer running into the centre of the storm, and that he can leave port sooner from having no repairs to undergo.

We have thus found that the centre of the storm was close to the *Rose* between midnight of the 5th and 1 A.M. of the 6th, nearest Mauritius about 5 A.M., and that it passed near if not over the *Governess* about 11 A.M.

The barque *Conflict*, on a voyage from London towards Mauritius, was in lat. 22° 14′ S., long. 58° 8′ E. on the 6th of December, at noon, when she experienced heavy gales from E. to E.S.E. and dark gloomy weather.

(Midnight previous, wind E. to E. by N., in royal, flying jib and gaff topsail. 2 A.M. in fore top-gallant sail. 4.50 A.M. in main top-gallant sail, and second reef of topsails).

P.M. Wind S.S.E., very heavy gales, which increased rapidly to a violent hurricane, with a tremendously heavy sea running. Furled the courses.

1 P.M. foot rope of fore topsail gave way, and split the sail, clued it up and furled it. Placed the ship under a close reefed main topsail, main trysail, and fore topmast staysail, sea running mountains high.

3 P.M. A heavy sea struck the ship forward on starboard bow, which broke head rails; started cut-water, &c.

Ship labouring and straining heavily.

4 P.M. Wind S. by E., course E. by S. four knots,—split main trysail to ribbons. 5 P.M. split main topsail. 8 P.M. Wind S.S.W.

Midnight S.W., a heavy sea struck her forward carrying away jibboom.

Dec. 7:—6 A.M. Decreasing breeze, W. Noon, light breeze and fine, lat. 21° 38′ S.; long. 58° 14′ E.

The *Japan* was not far from the *Conflict*, and had the same kind of weather, though not so severe, as she was further from the vortex.

The *Emily Smith* was to the westward of the *Conflict*, and though the wind veered in the same way, viz. E. to S.E., S., and S.W., her distance from the centre caused her to feel the strength of the wind less than either the *Japan* or *Conflict*.

The *Demetrius*, *Juliana*, and several others, were more or less

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implicated in the gyratory mass, though not near enough to the centre to suffer much.

The French ship, *Ville de St. Pierre*, was dismasted at about midnight, on the 6th, at noon previous, she was in 22° 56′ S. and 59° 47′ 15″ E., wind commenced at E. to N.E. and veered round by N. to N.W.

Barometrical observations were made hourly at Port Louis, and every quarter of an hour at Plaines Wilhems, by Dr. Beke, during the height of the storm.

From the information obtained, I imagine that the centre of the storm must have been in about lat. 17° 30′ S. and long. 61° 30′ E. on the 4th of December at noon.

That it progressed about S. 63° W., at the rate of 6 miles per hour till the afternoon of the 5th, when it assumed a more southerly course. At midnight, on the 5th, it must have been in about lat. 19° 50′ S. and long. 59° E. Its course after that was gradually more southerly still, at the rate of about 8 miles per hour until noon of the 6th, after which its course was about south. It was nearest the *Conflict* at 6 P.M., on the evening of the 6th December, at which time the wind in Mauritius was westerly, the barometer rising and the weather becoming fine.

The wind with the *William and Mary* veered from the eastward to N.N.E., N.E., N., and N. by W.

At Mauritius it veered from E.S.E. to S.E., S., and S.W., shewing that the centre passed between her and this island, and also proving that the storm rotated in the usual way in this Hemisphere. The calm at the centre lasted about two hours with the *Rose*, and as the storm was progressing at the rate of about 8 miles per hour, the diameter of the centre would be about 16 miles. The diameter of the storm could not have been above 360 miles.

No electrical phenomena were observed by any of those who experienced this storm.

There was a severe Hurricane, of limited extent and almost stationary, at the latter part of December 1857, about 25° to the eastward of this island.

The *Adelaide* suffered severely by it, and the *Vesta* felt its outer circles.

A Hurricane inflicted much damage at Bourbon, on the 17th January 1858. I have obtained a large supply of data, and have also to thank Mr. Bridet, of Bourbon, for having kindly sent me a copy of his observations during the storm. I hope, at an early date, to be able to furnish full particulars of this Hurricane.

A. B. FYERS, Captain R.E.

Port Louis, Mauritius, 25th February 1858.

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WHIRLWIND IN THE SOUTH INDIAN OCEAN, NEAR THE WEST COAST OF AUSTRALIA.

Seen by the Barque "British Empire," from Portland Bay towards India, 1857.

Thursday, October 8th, lat. per noon observation 31° 37′ S., long. per chronometer 112° 37′ E., barometer 30, thermometer 75°; P.M., light winds veering from N.W. to N. and N.N.E. and back to N.W., weather remarkably fine; cirrus and stratus with little or no motion; stars very low on the horizon, so much so that the look out reported a light, which proved to be the planet Jupiter just rising; barometer standing at 29.99, thermometer 69°; midnight, wind veering as before, the barometer slightly falling to 29.96. Ship close hauled on the starboard tack under all sail.

Friday, October 9th, A.M., weather moderate and cloudy, wind still veering from N.N.E. to N.N.W. and N.W. and back; cumulo-stratus changing with great rapidity. 4 A.M. barometer 29.79; 8 A.M. barometer 29.71, breeze freshening, and still veering as before. Ship heading now N.W. and now W.S.W.—westerly swell making; handed the royals, and not liking the appearance of the weather sent the yards down, anticipating the ship is approaching the eastern verge of a revolving storm.

9 A.M. barometer 29.69, thermometer 66°, handed top gallant sails &c. 10 A.M. barometer 29.66, thermometer 66°, wind died away almost to a calm,—notwithstanding, took the second reef in the topsails, and made all snug aloft for a stiff breeze. 11 A.M., wind still light, and veering as before, barometer 29.62, thermometer 59°, nimbus forming with a very threatening appearance,—handed the courses, jib, mizen, &c. and saw all clear for wearing ship. 11.30 A.M., wind fixed at N.N.W., strong breezes and heavy rain,—wore round on the port tack, head to the north-east. Noon—lat. per ac., 31° 37′ S. long. ac. 110° 57′ E., barometer 29.57, thermometer 63°; came on a very violent gust of wind from N.N.W. Hove to under close reefed main topsail. Barometer rapidly falling to 29.47; at 1 P.M. barometer standing at 29.47; clouds very highly charged with electric matter, very threatening appearance to the westward, wind veering from N.N.W. to N.W. and W.N.W.; 2 P.M. barometer still stationary. My attention was called to the most singular phenomenon that I ever witnessed upon the water, and twenty-two years experience has shewn me a little; at the time the wind was blowing furiously from the N.W., I observed an immense cloud of spray being carried up by the force of the wind directly in the path of the ship, and at about three quarters of a mile a-head, covering an area of, I should say, at least 150 yards, the water boiling and foaming in a most terrific manner, sometimes contorted into all shapes, and then again assuming a spiral form, and evidently feeling the effects of the N.W. gale, although it sometimes rose to the height of full 300 feet.

This singular phenomenon passed across the track of the ship, and

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I can assure you I felt greatly relieved when I saw it making rapid progress to leeward, travelling to the south eastward before the gale; in the course of ten or twelve minutes it was beyond the verge of the visible horizon.

I have often seen water spouts form and disappear in the neighbourhood of the Island of Java and elsewhere, but nothing to equal this small but formidable looking Cyclone (for the wind within the verge was certainly rotatory), and I have no doubt, from its appearance, that had it passed over the ship, it would have swept the masts away by the board.

3 P.M. Wind veering to west, barometer rising to 29.50, thermometer 61°, very hard squalls of wind but no rain,—clear sky to the south-west, with dark patches of cumuli; at other points of the horizon clouds heavily charged, sea very turbulent and mountainous from N.N.W.—ship bowing it admirably.

6 P.M. More moderate, but the sea very high, barometer stationary at 29.50; set balanced reefed main trysail and fore topmast-staysail. Midnight heavy gusts, barometer 29.47, thermometer 60°.

Saturday, October 10, A.M. Heavy gales and violent squalls at W. N. W. hauled down fore topmast-staysail and stowed the trysail, barometer 29.43. 4 A. M. Blowing a complete hurricane. Ship being in ballast, laying well down to it, and shipping little or no water. 6 A. M. barometer 29.39; here the hurricane attained its height.

8 A.M. Wind W.S.W. Barometer lifting to 29.42, squalls very heavy. High seas rising. Noon, heavy gales at S.W. by W. Heavy seas from N.W. and S.W.

Barometer 29.50. Thermometer 62°.

Latitude per meridian and double alts. 31° 39′ S.

Longitude per chronometers, from 8 A.M. 111°.10′ E.

REMARKS.—For the first twenty-four hours, noon of the 8th to noon of 9th, the ship is approaching the outer gyrations of a Cyclone wind, for at noon of the 9th the wind had fixed at N.N.W. with a fast falling barometer, placing the ship in the north-east quadrant.

You will observe the ship is within 250 miles of the south-west shores of New Holland; had I more sea-room to the eastward, I flatter myself I could manage to give this unwelcome visitor a wider berth than I shall be able to do in the present case. However, the barometer, sky, turbulent seas, &c. denote the approach of the ship to the centre. The only thing we can do, thus situated, is to stand from it, and trust to its taking a more southerly direction, thereby passing a-stern of the ship.

At 3 P.M. the wind being from the west, and the barometer rising, the centre is passing (but slowly) to the south-east. 6 P.M. weather evidently more moderate, but the barometer does not rise. Is our enemy going to recurve upon us? Not at all unlikely, where we are. His progress to the south-east has been obstructed by the Cape Leeuwin land. We are all secure aloft, and must try and battle with him.

At midnight, the barometer was 29·49, and at 4 A.M. 29·43,

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so that the centre has actually approached the ship again until 6 A.M., when it again makes to the eastward, towards the coast.

At noon of the 10th the wind was S.W. by W., but the sea very high, with a rising barometer. 4 P.M. wind S.W. by S. still blowing very hard,—the helm was put up, double reefed topsails and reefed courses were set upon the ship,—and bore away along the coast of New Holland N. by W., so as to gain the verge of this formidable gale,—the barometer afterwards rapidly rising.

Midnight, ship under all sail, steering N.N.W. with a strong breeze at S.S.W.

THOMAS F. HAINES,
Commander, British Empire.

P. S. In respect to Cyclones, on the west and north-west coast of New Holland, I recollect some years ago, as chief officer of a fine ship, which was heavily coal laden, when bound towards the China Sea by the eastern route, before reaching Sandlewood Island, and off the N.W. coast of New Holland, being caught in one of the most terrific breezes I ever experienced. We had had the south-east trades for some days, when on the morning of the day in question, at sunrise, the sky took a sudden change, throwing a red glare over the whole visible horizon, and as the day advanced, so the breeze freshened, the ship straining along under a heavy press of sail, with the south-easter on the starboard quarter, little thinking, the faster we drove, the sooner we should catch it; but we had not Piddington's "Horn-Book." However, towards noon, we found it was coming too much for us; the topsails were close reefed, the ship still going large to the northward, which did not do for long, as the sea rose so high, that the ship was brought to the wind *on the starboard tack, head to the eastward.* Now here we put the ship's head towards the centre of the Cyclone, and directly in the path of it. What was the consequence? the ship was not a half-hour that way, before the topmasts and jibboom were gone, sails blown from the yards, and the ship upon her beam ends.

I have by me now a private journal I used to keep at the time, and I see, that from 6 to 8 P.M. of the same day, the wind actually went round the compass in the two hours, and with such awful force, that it was impossible to turn either one way or the other.

At midnight the Cyclone had passed over, and we again got the trade wind.

After repairing damages, and gaining the Banda Sea, we spoke and boarded a Dutch ship bound to China. "Ah!" say we, "you look nice and neat up aloft; did you not have a stiffish breeze, such and such a latitude and longitude." Here we compared logs. "Oh yes," says the Dutchman, "but with the south east gale, I ran off to W N.W. West, and then W.S.W., keeping the wind a little on the port quarter, until the barometer lifted, then I hove to on the port tack.*" I took the liberty of asking this gentleman, being on board his ship at the time, the principle upon which he manœuvred his ship so well, upon which he showed me Piddington's Memoir.—T. F. H.

* This Ship, while running before the gale, got her top-gallant masts upon deck, and actually rigged the jibboom in—the barometer had fallen so low.—T. F. H.

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HARBOURS OF REFUGE.

The following Report of the Select Committee appointed "To inquire into the policy of making further grants of public money for the Improvement and Extension of Harbours of Refuge," has been presented to Parliament:—

The Committee, which was appointed on the 9th February, consisted of the following 20 members:—Mr. Wilson, Mr. Lowe, Mr. Baring, Lord Naas, Lord Adolphus Vane Tempest, Mr. Kendall, Mr. Liddell, Sir Frederick Smith, Mr. Philips, Mr. Hassard, Mr. Augustus Smith, Sir Robert Ferguson, Mr. John Henry Gurney, Mr. Traill, Mr. Duff, Mr. Fergus, Mr. Dodson, Mr. Clay, Mr. Joseph Ewart, and Mr. Macartney.

It was subsequently ordered that the Committee consist of 22 members; and that Admiral Duncombe and Sir James Elphinstone be added thereto, and at a later period it was ordered that Mr. Duff be discharged from further attendance on the Committee, and that Lord John Hay be added thereto.

The Committee, having considered the matters referred to them, have agreed to the following Report:—

1. Your Committee, which was originally appointed in the session of 1857, and which reported the evidence taken before it in that year, has continued its labours since its re-appointment, at the commencement of the present session. During the two sessions, the Committee has examined Captain Washington, Hydrographer of the Navy, Captain Vetch, in charge of the Harbour Department of the Admiralty, Captain Sulivan, the naval member of the Board of Trade, Mr. Coode, Engineer-in-chief for the Harbour of Refuge and Breakwater at Portland, Mr. E. K. Calver, R.N., the Admiralty Surveyor for the East Coast of England, and other officers of the Royal Navy, who have been engaged in surveys of different parts of the coast; besides these, Civil Engineers, Master Mariners, and others, who, from their intimate connection with, and knowledge of the subject, could afford information upon the matter referred to this Committee, have also been examined. The reference to your Committee, was "To inquire into the policy of making further grants of public money for the improvement and extension of Harbours of Refuge," upon which it has agreed to the following Report:—

2. Your Committee has not thought it necessary to take any evidence as to the great and increasing extent of the Shipping Interests which are involved in the inquiry intrusted to it, inasmuch as there is an abundance of documents already before the House which sufficiently illustrate those points, but to which it may not be out of place to refer, as bearing upon the observations which your Committee has thought it its duty to make. In the "Statistical Abstract" laid before Parliament in the present session, at pages 30 and 31, accounts are given of the progress of the Shipping of the United Kingdom for a series of years. From these accounts, it appears that in 1843, only fifteen years ago, the entire amount of

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British Shipping which entered into, and cleared from the ports of the United Kingdom, was 7,181,179 tons, and of foreign 2,643,383 tons, making, together, an aggregate tonnage of 9,824,562 tons; but, that so rapidly has the Shipping Trade of the country increased in the interval, that, in 1857, the quantity of British tonnage entered into, and cleared from the ports of the United Kingdom, had increased to 13,694,107 tons, and the Foreign Shipping to 9,484,685 tons, making an aggregate quantity of no less than 23,178,792 tons, being an increase of 13,354,230 tons, or of *one hundred and thirty-six per cent.* in fourteen years. Again, the same returns show, that while in the year 1843 the tonnage of sailing and steam-ships built and registered in the United Kingdom amounted only to 83,097 tons, in 1857 it had increased to 250,472 tons; and lastly, it appears, that while the entire number of men (exclusive of Masters) employed in the registered vessels of the United Kingdom in the home and foreign trade, not including river steamers, in 1849 was 152,611, that number had increased in 1857 to 176,387 persons. Your Committee would remark, that the progress in our Shipping thus referred to, however great it may appear, has continued steadily from year to year, which would seem to indicate that it is destined to go on at about the same rate. The importance which your Committee attaches to the remarkable facts which these returns disclose, in connection with the subject of its inquiry, is derived from a consideration, first, of the great extent of the property and life thus shown to be at stake, and next, from its rapid increase; for it must be obvious, on the one hand, that it is in proportion to the amount of the stake that an effort should be made on public grounds to afford the greatest possible security to our Shipping, while it must be equally plain, on the other hand, that the more crowded the waters around our shores become by increased traffic, the greater must be the risk of accidents from collision and otherwise, and the more urgent must be the necessity for greater accommodation, and provision for safety. The practical conclusion which your Committee derives from these considerations, is, that however much it may appear that Harbours of Refuge are now required for the security of our Shipping, it is a want which must become more and more urgent from year to year. And, moreover, that inasmuch as the construction of such Harbours must necessarily occupy many years, it is of the utmost importance that no time shall be lost,—first, in determining upon some national policy in relation to them,—and next, in giving practical effect thereto.

3. In order that the House may the better see the extent to which losses and damage are sustained by casualties at sea, the Committee has caused to be inserted in the Appendix to the Report of 1857, a wreck chart for the five years 1852 to 1856, both inclusive, compiled from the Admiralty and Board of Trade returns, and submitted to the Committee by the Hydrographer of the Admiralty. By referring to that map, and to the evidence of Captain Washington, it will be seen that the number of ascertained casualties in those years

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amounted to 5,128, being an average of 1,025 a year. These casualties consisted of—

1. Total losses by stranding or otherwise ..	1,940
2. Total losses by collisions	244
3. Serious damage, having to discharge ..	2,401
4. Collisions with serious damage	543
Total	5,128

The total ascertained losses from all causes, therefore, amounted to 2,184 vessels, or at the average of nearly 437 in each year. The total reported loss of life connected with these casualties was 4,148 persons, or, upon an average of five years, nearly 830 in each year. In 1854 the loss of life amounted to no fewer than 1,549 persons. The value of the property lost by total wrecks is estimated by Captain Washington at £1,000,000 a year at least, and by other losses and casualties at £500,000, making together £1,500,000 as the annual loss to the country from these casualties on our coasts. Captain Sulivan considers this a very low estimate, and would place it higher. Your Committee is disposed to adopt it, as at least not being an exaggeration of the truth. It may, therefore, be fairly stated that under present circumstances, the ascertained average loss upon the coasts of the United Kingdom amounts annually to 830 human lives, and property to the value of £1,500,000; and this is independent of the numerous and serious losses, both of life and property, connected with the fisheries on the coasts.

4. In conducting the inquiry referred to it, your Committee has endeavoured to keep strictly in view the distinction between Harbours constructed and required for the trade of particular ports, and Harbours of Refuge applicable to the general trade of the country, foreign as well as coasting, frequenting or passing particular parts of the coast. The former it has not considered strictly within the scope of its inquiry, although some evidence has been taken on that class of Harbours, when it was considered to bear, in some degree, less or more upon the question of Refuge. Your Committee will make some observation upon such Harbours in a subsequent part of this Report; but it has been mainly to the latter, viz.—Harbours of Refuge upon such parts of the coast as, being much frequented, are without any adequate place of safety into which vessels can run if overtaken by storms, that its attention has been directed. In this, the chief part of its duties, your Committee has found that its labours have been much abridged by the happy circumstance, that already considerable portions of our coasts are furnished with natural Harbours of Refuge; so that it has found it compatible with a discharge of its duties to confine its attention chiefly to a few important points. Along the whole of the west and north coasts of Scotland it has been shewn that numerous and excellent natural Harbours exist. For a portion of the east coast of Scotland, the Firth of Forth forms an excellent place of Refuge. On the east coast of England—the Humber, the Wash, the

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Yarmouth Roads and the Thames afford, in different degrees, places of security. Between the Thames and the Land's End, extensive Harbours are being constructed at Dover and Portland, in compliance with the recommendation of the Royal Commissioners of 1837 and 1844; excellent Harbours already exist at Plymouth and Falmouth; and good shelter is found on other parts of that coast. Between the Land's End and the Solway some shelter is afforded in the Bristol Channel, and in the natural Harbours on the Welsh coast; a large Harbour is also being constructed at Holyhead, which has already, even in its incomplete and unfinished state, proved of great advantage to the extensive trade of that part of the kingdom. The coast of Ireland is well furnished with natural Harbours, though works to a comparatively limited extent are required in order to render some of them, in the most important localities, more available for national purposes.

5. The most dangerous portions of the coast where works of a national character are necessary and practicable, following the order in which the evidence has been taken, are—first, that part of the east coast of Scotland extending from the Pentland Firth, on the north, to the Firth of Forth, on the south; second, that part of the east coast of England extending from the Fern Islands, on the north, to Flamborough Head, on the south; third, that portion of the west coast of England extending from the Land's End, to the south coast of Wales and including the Bristol Channel; fourth, the points on the coast of Ireland to which reference has already been made, and one point in the Isle of Man. Independently of the three great works now in progress at Holyhead, Portland, and Dover, these constitute the works which your Committee is of opinion are most urgently required.

FIRST.—THE EAST COAST OF SCOTLAND.

6. Between the Pentland Firth, on the north-east extremity of the coast of Scotland, and the Firth of Forth, on the south, there is no Harbour for the shelter of vessels caught in storms, except Cromarty Firth, and that is so deeply embedded in the bay as to be practically unavailable for the great bulk of the shipping passing that line of coast, which is generally of a very bold and dangerous character. The traffic on this coast is very considerable. Independent of the coasting trade, and that with the Orkney and Shetland Islands, there is a large trade with Archangel and other ports in the North of Europe, and there is also a large trade between the ports on the west coasts of England and Scotland and Ireland, and the ports in the Baltic and the north of Europe, passing to and fro through the Pentland Firth. Besides all this passing trade, a very large trade has of late years risen up, and is still increasing, between the continental ports and the north-east coast of Scotland, in the export of fish. It appears in evidence that shipping resorts to the port of Wick alone to the extent of 60,000 tons a-year for the export of fish. The want of a good Harbour of Refuge on this part of the coast has been very strongly urged upon your Committee by all the witnesses who have given evidence upon the subject, but principally by the experienced

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Officers attached to the Admiralty. It has been urged mainly in respect to the trade of the coast including the fisheries, but also in some degree, for the use of the ships of Her Majesty's Navy. Three places have been pointed out as the best suited for the construction of such a Harbour, viz., Wick, Peterhead, and Fraserburgh. The majority of evidence is, however, in favour of Wick, with reference especially to the fishing trade. Capt. Washington and Capt. Vetch, of the Admiralty, and Capt. Sulivan of the Board of Trade, whose attention had been specially and officially called to the question, and who had carefully examined it upon the spot, are very decided in favour of Wick. On the other hand, Colonel Moody, of the Royal Engineers, has spoken in favour of Peterhead, but chiefly in relation to its advantages in a strategical point of view. Capt. Henderson, of the Royal Navy, has also spoken strongly in favour of the position of Peterhead. Mr. Stephenson, the well-known engineer, also, while he admitted the more extensive trade of Wick, and the necessity for a Harbour there, gave the preference to Peterhead; while Mr. Abernethy was of opinion that Fraserburgh presented advantages superior to any other place; but while differences of opinion existed as to its being the best spot for a Harbour of Refuge in respect to some of its objects, all the witnesses concurred in opinion that, for the purposes of the great fishing trade, Wick is most important. It is stated that upwards of 1,700 boats fish off the coast of Caithness from all parts of Scotland, and even from England and Ireland; of these at least 1,000 boats, manned by 5,000 men, belong to Wick, while only 400 boats belong to Peterhead, and a still smaller number to Fraserburgh.

(To be continued).

THE MEYER AND M'DONALD ISLANDS IN THE SOUTHERN INDIAN OCEAN.

(Concluded from page 180).

The positions given by Capt. Attwaye coincide with those of Capt. Heard; and are we therefore to conclude that they refer to islands not seen by Captains M'Donald, Hutton, Rees, and Rogers? We think we are scarcely warranted in such a conclusion. Something must be allowed for the estimation of distance from the islands; and as all persons are not equally gifted in this respect, we may say the differences in the latitude are not large. But of the longitude, the difference of the extremes is 2° 26′, equivalent to 88 miles on the parrallel of 53°. Now, from the general description, by all parties, of the characteristic features of the land, we believe we are warranted in saying there are only two tolerably large islands, and several detached rocks and pinnacles, and we therefore draw the inference that the discrepancy in position as regards longitude, arises partly from calculation, but more largely from *error of chronometers*, a subject which does not sufficiently receive the attention of Captains. Two very important articles, the first—" On the Variation in the Rates of Chronometers,"

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(*Mer. Mar. Mag.* Vol. I. p. 401–6), and the second—"On the Importance of Testing Chronometers before they are used at sea" (*Mer. Mar. Mag.* Vol. IV. p. 33–40), written by John Hartnup, Esq. F. R. S. A., Superintendent of the Liverpool Observatory, are recommended for careful perusal, and Captains will there see to what errors they are subjected. We may say then that the position of these islands is only approximately known, and caution is requisite in sailing near the 53° S. parallel between long. 71° and 75° E.

We may here incidentally mention, that it is by no means impossible, that Shoals and Rocks may be met more to the Northward and Eastward as the following account will show :—

Captain Inglis, of the *Gauntlet*, of Liverpool, passed Kerguelan's Island on the 11th Nov. 1853, in lat. 53° S. He here encountered continual snow storms for a fortnight, accompanied by N. and N.E. winds. In lat. 50° 50′ S., long. 77° 30′ E., he passed over a bank of shoal water, the water suddenly becoming of a muddy appearance, and he has no doubt but that he passed within a very short distance of some hitherto undiscovered shoal, or island, as the water became perfectly smooth; but, in consequence of the heavy fall of snow, Captain Inglis was unable to make such minute observations as he otherwise would have done. This shoal, or island, was observed by the crew and passengers, as well as by the Captain, who called them to witness the discovery he had made. Observing the blue water ran to the S.E off the shoal, he steered away direct S. for one hour, going 13 knots, and then dropped suddenly into blue water. Captain Inglis strongly recommends all navigators running from England to Australia, to keep a look-out when they arrive in this latitude.

SAILING DIRECTIONS FOR ENTERING ST. GEORGE's SOUND, FLORIDA, BY THE WEST PASS.

SAVANNAH, *April* 12, 1858.

SIR,—I have the honour to communicate, for the consideration of the Lighthouse Board, an extract from a Report recently made by Lieut. Commanding J. K. Duer, U. S. N., Assistant in the Coast Survey, at present engaged in the Hydrography of St. George's Sound, Florida.

"The Coast Survey Signal, situated at the easternmost point of St. Vincent's Island, at the West Pass of St. George's Sound, has been made a Beacon, and may be used as a guide by vessels drawing less than 11 feet water.

"I would respectfully suggest that this point be marked in a permanent manner, so that the Beacon may be replaced if washed away in a gale—an occurrence by no means unlikely, as it is situated on a low sand beach. A durable Beacon erected here would be very serviceable to coasters, as well as to the pilots of the place.

"The directions hereto appended, if strictly observed, will carry

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vessels of the above limits of draught, safely in, thus saving the time and distance unavoidable in following the regular channel."

To enter West Pass, St. George's Sound, with vessels drawing less than eleven feet water:—With the Lighthouse on Cape St. George, bearing East (by compass), and when in four or four-and-a-half fathoms, bring the Beacon on St. Vincent's Island to bear N.E., and run directly for it until the Lighthouse bears S. E. by E., with the beach of St. Vincent's Island close aboard, then haul up E. by N., keeping on this course until inside both points of the entrance. Here vessels may anchor in from three to three and a-half fathoms, with good holding ground.

"The Beacon is White, and can readily be seen at the distance necessary to get the bearing. It is of the form of a pyramid, and neither of the pilot's ranges (which are of entirely different shape, and stand considerably to the westward) must be mistaken for it."

Very respectfully, yours,

A. D. BACHE, Supt. U. S. Coast Survey.

Hon. Howell Cobb, Secretary of the Treasury.

New York Courier, May 17, 1858.

OFFICIAL INQUIRY RESPECTING THE WRECK OF THE SCREW STEAM-SHIP "AVA."

An Official Inquiry was opened at the Greenwich Police Court, before Mr. Selfe, assisted by Captain Walker, R N., as Nautical Assessor, relative to the loss of the P. and O. Co.'s Screw Steamer *Ava*, wrecked near Trincomalee. Mr. O'Dowd attended on the part of the Board of Trade, and Mr. Coxwell for Captain Kirton.

Capt. John Johnstone, formerly of the Madras army, and a passenger by the *Ava*, said:—I first heard of the deviation to Trincomalee about noon of the day of the expected arrival there. About 4 P M. I saw land on the starboard side. At sunset, a little before 6, the sails were taken down, the vessel still going at full power. At 7 o'clock it was perfectly clear—clear enough to see the land. Then she was nearing the land, and going at full speed. I have been very frequently at sea on the Ceylon coast, and my impression was, she was a great deal too close to the land. No lead going. I should think she was about three miles off the land at 7 o'clock. Referring to the chart of the coast of Ceylon, I think she was going too near. The island of Ceylon is a kind of oval, and a vessel going in a southerly direction would be approaching the land. I did not see the lead used. The weather was fine, with a moderate breeze. I have been in the Indian Ocean at all times,—and during the N.E. monsoon. There was no monsoon on this occasion. Heard the signal given at five minutes to 8 o'clock of "Starboard,—hard a-starboard."

By Capt. Walker.—Who gave the orders?—Witness: There were two persons giving orders. On going forward I heard the ship give a very slight scrape, and saw a rock on the starboard bow. There was another very slight scrape, and I heard the Captain then say—"Don't countermand my orders, and the ship will be all right." About a couple of minutes

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afterwards she struck, and then the Captain said—"Go a-head, full speed." Then the order was given by the Captain—"Turn astern." I think the final order—"Starboard—hard a-starboard," was given by the second person; the others were given by the Captain. The engines were then stopped, and the vessel struck. The ship settled on the rock, with her head parallel to the shore, and remained there, the water rushing in at the head. I did not hear any one on deck say that a Light had been seen previous to the vessel striking. I did not see any light. The Trincomalee light could not be seen, because Pigeon's Island interposed. When we were in the boat after the wreck, at 9 o'clock, I saw a small light on the shore from a native hut, but which could not have been mistaken for the Trincomalee Light, which stands high. The light had not the slightest resemblance to that of a Lighthouse. The rock on which she struck was 12 miles from Trincomalee, in a direct line. I entered my protest at Ceylon against the deviation of the vessel to Trincomalee, and also as to gross negligence in the navigation of the vessel. The passengers were put in the boats, and remained near the ship all night.

By Capt. Walker.—If the lead had been hove, or the speed of the vessel had been reduced, I should have known it.

By Mr. Coxwell.—After the wreck, Capt. Kirton was perfectly cool and collected. I do not recollect that either blue lights or rockets were sent up previous to the wreck. The land was made at 4 P.M. I have been in Galle and Colombo, but never at Trincomalee. At the time of the wreck it was dark.

Capt. W. H. Haswell, R.N.—I was passenger on board the *Ava* from Calcutta to Southampton. Before going on board I did not hear of the intention of stopping at Trincomalee. Up to the 10th of February everything appeared to be conducted in a proper manner. In the evening of that day, between five and six o'clock, I came on deck. Land had then been seen about an hour previous. The vessel was at full sail. We were then running along the land, which was about 5 or 6 miles off. The ship was going southwards, parallel to the coast. I went below about seven o'clock, and did not come up again until after the wreck. I have navigated those seas. The Trincomalee is a very indifferent Light, and is not properly kept. I was there a few months before, and the apparatus for hoisting it was gone, the Light being on the pedestal. The vessel was kept at full speed on my going below. The land was perfectly visible. A southwardly course in a steamer, parallel with the coast, would be a proper course to keep. In nearing the coast of Ceylon, it is advisable to use the lead. In the Navy, when we get in sight of land, we have leadsmen employed, although no soundings are to be obtained. I think it was in September, when I was at Trincomalee, when I found the apparatus of the Light gone. Up to the time of the striking, there did not appear anything faulty. I cannot account at all for the ship striking. My opinion is, that the ship's course must have been altered considerably; the ship's head pointed towards the shore.

By Capt. Walker.—I have been to Trincomalee in the Himalaya twice, and on both occasions found the Light deficient. It is hoisted on a pedestal of stone with a Flag-staff. When I was there the apparatus was out of order and was exhibited on the pedestal. It was also badly attended to by one man; he was an artilleryman. There is no Master-Attendant, and no responsible Agent. I believe the political Agent has charge of the Light. They have gone out in the middle of the night. It is more difficult to stop a screw than a paddle steamer. Our orders in the Navy are—to keep lead going when in sight of land. On looking

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at the chart if the vessel did not come within 25 fathoms, according to sailing directions, it would not have got into difficulties. I am not aware whether the lead was hove or the speed reduced. I heard, when below, the signal given to "ease the engines,' and then "turn astern." It seems inexplicable to me that at 11 o'clock, the ship should have been five miles off the land and an hour after to be on the rocks.

By Mr Selfe.—I expected we should have been at Trincomalee at 8 o'clock, and I asked the Captain respecting it. He told me it was 8 when the ship struck. I saw a light from the beach all the night after the ship struck, about two or three feet high. It looked like a fisherman's light. I should not have mistaken it for the Trincomalee Light. I knew it to be of considerable elevation, having seen it before. The light we saw was not steady. I have heard our naval officers say, that in nearing the Flagstaff at night they could not see the Light, and have been compelled to remain outside all night.

By Mr. Coxwell.—The light seen on the beach, if observed five or six miles off, would have appeared on the water.

By Capt. Walker.—Capt. Kirton told me that the compasses were altering, and that the variations given were not to be depended on.

Robert Willbank Macaulay, assistant-surgeon in the Bengal army, after confirming the previous evidence, said; I saw Capt. Kirton on shore the next day, and heard him say to General Mitchell and Colonel Greathead, speaking of the wreck, that he had intended the night before to have given orders to keep the ship off three or four points, but that one of the passengers, Lady Dowling, spoke to him, and the orders were not given. The impression on my mind is that he meant he would have given the order had not a lady interrupted him. The weather was fine. There was no fog. I don't recollect Capt. Kirton saying he had mistaken the Light, nor anything about a current. The only other thing I remember Capt. Kirton saying was, "that if anybody had told me a few hours previously it would have occurred, I should have laughed at them."

Capt. Cooper Kirton, examined on oath, at his own request, stated:—I am a Commander in the service of the Peninsular and Oriental Steam Navigation Company, and lately in command of the steam-ship *Ava*, on her passage from Calcutta to Ceylon. At noon, on the 16th February, the ship was in lat. 9° 54′ N. long. 81° 10′ E. We made the land about 4 o'clock. Land was four points on her starboard bow, and I estimated the distance at 12 or 13 miles. I then hauled the ship out a quarter of a point, so as to verify my distance off shore. I estimated the current, at 5 o'clock, was setting nearly two miles an hour westward. At that time I hauled out two points immediately. That would be S. 38° E. true course, the previous course being S. 16° E., true. I calculated that would take me off Trincomalee clear of all soundings, and that we should arrive off Flagstaff Point at 8 o'clock, making the Light between 7 and half-past 7. We made out the light at 7.20, at a point S.S.W. That was the exact direction I expected to see the Trincomalee Light. All the officers thought it was the Trincomalee Light, and I hauled in to S. 23° E., true. I then supposed the ship was five miles off land. My object in hauling in a point was to run down off the port within equal distance to get a boat off to land treasure. Immediately, on making out what we thought the Trincomlee Light, a signal rocket and a blue light were let off. I had no idea, then, there were soundings. When we got abreast of the Light, I told the Chief Officer to haul her off four points, with the intention of standing off. The Light

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then bore about W. By the time the Chief Officer got aft, a boat was reported, which I saw was a rock. I immediately gave orders to put the helm "hard a-starboard," "stop her," and "turn her astern, full speed." These orders were given before she struck. At the time she struck, she was not going ahead at full speed. She struck almost immediately. I saw the Trincomlaee Lantern about a week after the wreck, and saw it the morning after it had been lighted on the previous night. It was then standing on the pedestal, being a common lantern. The reflectors were covered with smoke from the lantern, and I could not see whether they were made of copper or brass;—but I then found, on rubbing them, that the reflectors were brass. From the pedestal I could see the masts of the wreck, and on climbing the Flag-staff to where the Light should have been placed, I could see the ship. If the Light had been burning on the Flag-staff when the ship struck, I must have seen it. We had look-out men at the masthead and forecastle. We had no lead hove, because I did not consider the ship within soundings. After the ship struck, I calculated that the current was at the rate of four miles an hour about W.N.W. I attribute the loss of the ship to the bad state of the Trincomalee Light, and the current setting in at increasing rate from the time I had taken the previous calculations. I also ascertained, in Trincomalee, that the Light had been surveyed and condemned some months previous to the wreck of the *Ava*. I heard this from the officials at Trincomalee.

By Mr. O'Dowd.—I have often sailed as near as five or six miles off the shore before. My object in hauling off two points was to get to Trincomalee as quickly as possible. Had I remained to take soundings, I should have lost 24 hours. If I had taken soundings at 10 minutes before 8 o'clock, just before the ship had struck, it would have denoted danger. I recollect saying it was very unfortunate, and that if Lady Dowling had not made an observation to me, I should have hauled off a point or two. Had I not seen the light which misled me, I should have hauled off at half-past 7, having seen the distance. I think I told Capt. Johnstone to be quiet.

By Capt. Walker.—I had reason to be perfectly satisfied with the compasses, and the currents mentioned in the log-book are perfectly correct. My object in putting the vessel's head off the shore was to haul off for the boat being sent to the ship. It was government treasure that was to be landed. The bank at the north of Trincomalee is low. If the boat had not been sent off to the ship, I should have gone on the voyage, and not put into Trincomalee, by the consent of the Admiralty Agent.

Capt. Walker.—The most prudent course would have been after dark to have slackened your speed, and taken the soundings. It would not have detained you more than half-an-hour, and would in my opinion have saved the vessel.

Capt. Kirton.—I had no doubt of my position.

By Mr. Selfe.—I have seen the Trincomalee Light before. The reflectors are placed about right angles. I inquired at Trincomalee whether the Light had been lighted on the night of the wreck, but could not ascertain for certain, although I was told by some of the people that it was. If it had been sufficiently lighted we must have seen it. Had I not had to call in at Trincomalee the ship would have been at least 60 miles off the land in question. Perhaps there are no more dangerous currents than are to be met with off the Ceylon Coast, and I am as well acquainted with them as any man can be.

Capt. Walker.—Then does not that show that the greatest and every precaution should have been taken?

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By Mr. Coxwell.—I had asked the day previous to leave two hours earlier, in order to arrive at Trincomalee Point before dark, but was not permitted to do.

Capt. William More Gilson was sworn and said.—I was in Trincomalee Harbour in September last. The Light is the most troublesome one I have ever met with. It is reported to be 206 feet above the level of the sea, at a shore distance of 15 miles in the Admiralty Chart, and 12 miles in others. I could not see the Light until I got within six miles of the place. I could only then see it about a quarter of an hour, and it then went out, and I had the greatest difficulty in finding my way into the harbour, which I could not have done but for a ship lying in the outer bay showing me a light. After being at anchor half-an-hour the Light was again lighted. On reporting it the next day to Mr. Cooper, of Her Majesty's dockyard, he informed me it was a source of continual complaint, and that he had no authority; my impression being, that he said there was a difference between the naval and military authorities, and that it was no use his representing it to the military authorities.

By Mr. O'Dowd.—I don't know what the state of the Light has been since September.

By Mr. Selfe.—I don't think there is any Master-Attendant at Trincomalee dockyard.

Capt. Kirton, on the application of Mr. Coxwell, was recalled, and explained certain portions of his evidence given on the day previously. He said the impression conveyed was that Lady Dowling having spoken to him was the cause of his not altering the course of the ship just before the wreck, and that to this the loss of the ship might be in some measure attributable. The fact was Lady Dowling had asked him whether the ship was going to Trincomalee; and before he would have time to alter the course the ship struck.

Capt. Walker said the impression conveyed was that he (Capt. Kirton) had omitted to give directions for altering the ship's course, in consequence of being so spoken to by Lady Dowling. Although this was improbable, still the explanation given set the matter at rest.

Capt. Kirton was then re-examined. He said:—On the 16th February, at 5 o'clock (three hours previous to the wreck), the deviation of the ship's course, on the S. by E. course, was 4½° W., the ship being then ten miles off the land. At 6 o'clock the position of the ship was between seven and eight miles off the bank. I knew there was a current setting in shore, and I allowed 1¾ mile an hour. The rocks upon which the vessel struck were twenty-four miles from the position in which the vessel would have been had there been no currents, and eleven miles off where I expected the vessel was at the time. If the vessel had been seven miles off the shore at 6 o'clock, the ship would have passed about six miles out of the place. When I made the false light at 7 30, the ship was hauled in, and the change in the true course was found to be 15°. I fancy it was an accumulating current of from two to four miles. I never knew a current so strong, setting in on shore at this point before. When darkness set in I felt more anxious about the ship, but I thought I had hauled off sufficiently. At half-past 6 the ship was approaching Pigeon Island, the most dangerous part of the coast, but which point I expected to be protected by the Trincomalee Light. After going on shore, the natives told me there had been a light burning on the night of the wreck. There were no native huts in the direction the natives pointed as to the point where the light had been, but high trees.

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I had previously seen the Trincomalee Light in 1856, and considered it a good light, having never before heard that it was deficient. I expected to see the Light at Trincomalee hoisted on the Flag-staff, and had it been so on the night of the 16th the wreck would never have taken place. The light burnt on shore was said to be something of a torch.

Capt. Walker.—This evidence fully proved that great neglect had existed with respect to the Trincomalee Light, but if the lead had been used, the danger would have been ascertained.

Capt. Kirton.—I felt my position safe; but if ever I again go to sea, I shall take care the lead is constantly used.

Alexander Williamson, Chief Officer on board the *Ava*, and eight years in the service of the company, was next examined, and having corroborated Capt. Kirton's statement as to the time of sighting land, and the subsequent alterations of the course of the ship, said:—At half-past 7 I observed a light on the starboard bow. At 5 o'clock in the afternoon of the 16th, the ship was about eight miles off shore. No soundings were taken. It was my duty as Chief Officer, if I had thought soundings necessary, to have had the lead used. I remained by the wreck the whole night. I had not communicated to any person on board the vessel that the ship would arrive at Trincomalee about half-past 7 or 8 that evening. On going on shore, I did not see any native huts. The light which was seen on the beach was 40 or 50 feet high, and bore the same appearance as the Trincomalee Light. I heard Capt. Johnstone, of the Madras Army, speak to the Admiralty Agent on board. The darkness of the night would lead to the light on the beach being mistaken for the Trincomalee Light. The currents are very variable off the coast of Ceylon, as much sometimes as 60 or 70 miles a day, and they are not to be depended upon at any time of the year. The Trincomalee Light is a White Light, resembling the burning of a torch. It is more than 200 feet high, but the darkness of the night and the loom of the land would interrupt it.

Capt. Walker.—The charts show that the coast for a distance of 11 miles North of Trincomalee are indented with Rocks and Shoals, which extend one mile and a-half into the sea.

Mr. Selfe.—The charts show also that soundings are to be had within 10 miles of the land, and yet you say that when 8 miles off no soundings were taken, because you did not think them necessary.

The Witness.—I say my opinion is, that soundings were not necessary, the ship's course having been subsequently altered.

Mr. Selfe.—Do you adhere to that opinion now? because, for my part, I don't know how such a reply can be given?

Mr. Coxwell said, the witness meant that he had not looked at the chart at the time; but having now done so, he saw the ship was at the time within soundings.

The witness added that such was his opinion.

Capt. Walker.—And having now seen the chart, and that soundings are marked as to be obtained at 10 miles off the land, do you not think, that with a valuable ship, having an immense amount of treasure, it was wrong in jeopardizing this, and the lives of the passengers, by not taking soundings?

The Witness.—I do now think it was necessary to have taken soundings.

Sidney Dillon Shallard, the second officer, was next called, and gave evidence as to seeing the light on the beach, and the striking of the vessel, as described by former witnesses.

James Seaward Field, Commander, in the service of the Peninsular

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and Oriental Steam Navigation Company's service, was next called, and gave Captain Kirton, and Williamson, the chief officer, high characters for proficiency in the service.

Several testimonials as to the ability of Captain Kirton were then put in, among which was one signed by 40 of the principal passengers on board the *Ava* at the time of the wreck.

Mr. Coxwell having addressed the Court on behalf of Captain Kirton—

Mr. O'Dowd remarked, that there was a section in the Act to which he wished to draw the attention of the Court, not particularly in reference to Captain Kirton's case, and which was as to the payment of the costs of inquiries like the present.

Capt. Walker expressed his opinion, that the Board of Trade was only performing a public duty, and that, therefore, no costs ought to be given.

Mr. Selfe expressed himself in similar terms, and said, that whatever the decision arrived at might be, the Court would not think of inflicting costs upon Captain Kirton.

Mr. Selfe and Captain Walker then retired, and, after a short absence, returned into Court, when

Mr. Selfe said that he and Capt. Walker, from whom he received very great assistance, had given every attention to the evidence relating to the present very important inquiry. The evidence was such, that it would take some time to look carefully through it before forwarding their official report to the Board of Trade; but he thought he might then say what would be the substance of that report when forwarded. He and Capt. Walker both agreed with the explanation afforded by Capt. Kirton, that the primary cause of the wreck arose, to a considerable extent, from the force of the current which had set in, and the mistaking of a false light; but at the same time the Court could not wholly acquit Capt. Kirton of blame in the matter. By the evidence of himself and his Chief Officer, it was observed that the current had set in so early as four o'clock in the afternoon of the 16th (on the day of and four hours preceding the wreck); that the current was stronger at 5, and still stronger at 6 o'clock. Upon this point, however painful it might be for the Court to express an opinion, still it was necessary to do so, and the opinion of the Court was that Capt. Kirton, possessing the knowledge he did, had neglected to take that precaution which had been alluded to so often during the inquiry, viz. that of heaving the lead. If the lead had been used there could be no doubt the wreck would never have happened. If the lead had been so used three or four times, it could not possibly have detained the ship more than an hour upon its passage; but if the delay of taking soundings had occasioned the loss of 12 or 14 hours, as it had been stated it would, the vast interests confided to his care, and the many valuable lives on board, ought to have led him to have avoided neglecting the elementary precaution thus pointed out. With this exception, in not having adopted such precaution, the Court held him not to blame; and although, as he (Mr. Selfe) had before stated, it was painful to express an opinion to Capt. Kirton upon the point, seeing the many valuable testimonials which had been handed in as to his proficiency, skill, and courtesy, as a Commander; still, he and Capt. Walker had a stern duty to perform. He could only say they both sympathised deeply with Capt. Kirton upon his present painful position, and hoped that in his future career he would maintain the high character which he had, up to the time of this occurrence, earned for himself.

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BURNING OF THE BARQUE "HENRY JONES," OF CÆRNARVON.

The Board of Trade had received from the British Consul at Pernambuco a communication relative to the loss by fire of the British barque *Henry Jones*, 353 tons, Brewer, of Caernarvon, from Liverpool, for Coquimbo, with a cargo of patent fuel, in which the chief mate (G. Gaddarn) and the carpenter (John M'Laren) make a declaration, charging Capt. Brewer with having wilfully caused the destruction of the barque. In consequence of these allegations, an inquiry was ordered to be instituted, at Southampton, Captain Brewer having reached that port; and Mr. D. Colquhoun, the Receiver, has forwarded to the Board of Trade the subjoined statement made by Capt. Brewer, on oath:—"We left Liverpool on the 20th February last, but in consequence of springing a leak through stress of weather, which set in soon after, was obliged to put into Falmouth on the 8th of March, where we discharged about 80 tons of cargo, in order to admit of Lloyd's surveyor reaching the leaks, which were found to be in both quarters and in the stern. On the 20th we again proceeded When off Madeira, distant about 60 miles, on the night of the 11th of April, I was awoke by the second mate telling me that the cabin was full of smoke. I immediately jumped out of bed, and ran on deck to see if there was fire in the hold. Finding none, I went to the storeroom, and there found a bundle of oakum on fire, which we lost no time in extinguishing by water passed down through the hatchway. Nothing further of importance occurred until the 18th of April, when, on going into the forehold to examine the cargo, as I was in the habit of doing daily, knowing the dangerous nature of the cargo, on account of its liability to spontaneous combustion, I found that the ventilator in the forehold had been partially burnt, but that the fire had gone out. On the 9th of May there was observed a great heat in the hold. The crew proceeded to work down into the cargo, to endeavour to discover the cause, but after working down almost to the skin in the forehold, nothing was found. On the 14th the heat was again experienced; the mainhatch was taken off, and the crew got down as far as the second tier, below the lower deck beams; the dust from the cakes was very hot, but found no signs of fire. On May 15th, when in lat. 8° 30′ S. long. 32° 45′ W. at 5 A.M., the man at the wheel discovered smoke issuing from the cabin hatchway. I was at the time standing near him, and at once called all hands, and closed the hatches, and also the ventilators, in order to check the progress of the fire, and bore away before the wind, which was strong from the south, for the land. In about 20 minutes, the ship was enveloped in flames and smoke, and finding it impossible to save the vessel, I consulted the mate and carpenter as to the propriety of knocking out the port bow, in order to sink the ship, so as to prevent her endangering other vessels, but it was not done. We then lowered the boats with much difficulty, but in doing so, the long-boat got stove. Only some few clothes and a little bread and water were saved. Neither the ship's log-book nor the official log-book could be saved, owing to the intense heat and smoke. We succeeded in reaching Pernambuco on the 17th." The Receiver at Southampton states in his report to the Board of Trade, "that there is not the least foundation for the charge alleged against the Master by the mate and carpenter, the remainder of the crew having confirmed Capt. Brewer's statement in every particular."—*Shipping Gazette.*

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OFFICIAL REPORT ON

THE COLLISION BETWEEN THE "WONDER" AND THE "HAVRE" STEAM-PACKETS.

The following is the Report of the Magistrates to the Board of Trade, and the Reply, which has since been received :—

"GUILDHALL, SOUTHAMPTON, *May* 13, 1858.

"My LORDS—We have the honour to report to your lordships, that, in pursuance of your lordships' directions, we have, under the provisions of the Merchant Shipping Act, 1854, and with the able assistance of Captain Harris, your lordship's Assessor, proceeded to inquire into the circumstances attending the collision which took place on the morning of the 29th of April, between the iron steam-ship *Havre*, of 387 tons, commanded by Capt. Smith, and the iron steam-ship *Wonder*, of 250 tons, commanded by Capt. Clement, and both belonging to the New South-Western Steam Navigation Company, and both running been Southampton and Havre.

The *Havre* left the port of Havre at about a quarter before 12 o'clock on the night of the 28th of April, with passengers and cargo, for Southampton. The course she steered was N.¼W., for two hours and a half, to counteract the effect of the flood ebb tide, and which was altered to North at half-past two on the morning of the 29th. Captain Smith remained on deck till about a quarter to one, when he went below, leaving the second mate, Richard Williams, in charge of the deck, and with directions to call him if the *Wonder* hove in sight. About eight minutes past four A.M. he was called by the mate, who reported the smoke of a steamer in sight, and on going on deck, he went on the port side, and, according to his evidence, saw the *Wonder* a little on the port bow, or nearly ahead, about a mile and a half or two miles distant. The *Havre* was steering North at the time. The Mate had ordered the helm to be ported just before the Captain came on deck. The Captain again ported the helm, which brought her head at this time to N.N.E, and shortly afterwards, observing the *Wonder* did not alter her course, ordered the helm to be put hard-aport. By this time the *Wonder* was distant only about five or six lengths from the *Havre*, and appears to have put her helm hard a-starboard. The Captain of the *Havre* thereupon, seeing a collision inevitable, eased and stopped the engines, and the *Havre* struck the *Wonder* on the starboard quarter, doing her much damage, as appears by the Official Report of the Shipwright Surveyor to the Board of Trade. The collision took place about 34 miles from the Nab Light. The *Wonder* left Southampton a little before 12 the same night, and passed the Nab Light at 1.40 A.M. for Havre. After clearing the land, she steered S. by E., also to make allowance for the tide. At 3.30 A.M., the weather being then fine and clear, Captain Clement went below, giving strict injunctions to Robert Woodcock, the Mate in charge of the deck, to call him if the *Havre* hove in sight, and just before daylight, he sent the steward on deck with a message to the Mate, "to keep a good look out for the *Havre*." These instructions, however, were never fulfilled ; Captain Clement was not called according to his directions, and did not come on deck till after the accident had happened. Robert Woodcock, the Mate in charge of the deck of the *Wonder*, affirms that he saw the *Havre* at four A M, at the distance of four and a half or five miles, about a point and a half on the starboard bow. He never altered his course, which was S. by E., or took any particular notice of her move-

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ments till she had approached, as he states, to within a quarter of a mile. Seeing then that the *Havre* had ported her helm, and believing that, if he had ported his helm, he should have gone into her, he rashly ordered it to be put hard a-starboard, in a vain attempt, as the sequel proves, to cross her bows. Having materially weighed the evidence that has been brought before us on behalf of both ships, we have come to the conclusion that great carelessness and want of judgment was manifested on board of the *Wonder*, previous to the collision. The two ships were approaching each other nearly in a direct line. The *Havre* ported her helm, in accordance with the well known "Rule of the Road," when at a distance of a mile and a half or two miles from the *Wonder*. The latter ship did not alter her course till she came within six lengths of the *Havre*, and the collision was inevitable, when she put her helm a-starboard, and continued at full speed, in the hope of crossing the bows of the *Havre*. It is abundantly clear to us, had she taken the same precautions as the *Havre* appears to have done, no collision could have occurred.

We are, therefore, of opinion that no blame attaches to Captain Smith of the *Havre*, nor can we attribute any to Captain Clement of the *Wonder*, who was not on deck at the time, and was not called according to the special directions which he gave to Robert Woodcock, who was left in charge of the deck.

We are further of opinion that the collision was occasioned by the default of the said Robert Woodcock, who neglected to call his Captain, as specially directed, and did not observe the regulations prescribed by the 296th section of the Merchant Shipping Act.

We have the honour to be, my Lords,
Your lordship's obedient servants,
P. BRETON,
J. BERNARD,
Justices of the Peace for the Town and County of the Town of Southamption.

Office of the Committee of Privy Council for Trade, Marine Department, Whitehall, *May* 25, 1858.

SIR,—I am directed by the Lords of the Committee of Privy Council for Trade to acknowledge the receipt of the report of the Justices and the Nautical Assessor concerning the recent collision between the *Wonder* and the *Havre*, and to enclose, for the information of the Justices, copy of a letter which my Lords have thought it right to send to the Directors of the South-Western Railway Company on the subject.

I am, Sir, your obedient servant,
T. H. FARRER,

The Clerk to the Justices, Town Hall, Southampton.

Office of Committee of Privy Council for Trade, Marine Department, Whitehall, *May* 22, 1858.

SIR,—I am directed by the Lords of the Committee of Privy Council for Trade, to enclose, for the information of the Directors of the South Western Railway Company, a copy of the report made by the Justices and the Nautical Assessor, concerning the recent collision between the Company's steam-ships, the *Wonder* and the *Havre*. The Directors will observe, that the person by whose neglect and default the casualty is reported to have been caused, is Robert Woodcock, the second mate of the *Wonder*. This man does not possess a Certificate, and in his position, as second mate of a home-trade passenger ship, is not required to have

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one. My Lords have, therefore, no power to inflict any punishment on him. My Lords understand, that it is a common practice to leave officers, in Woodcock's position, in charge of the deck, under circumstances similar to those under which Woodcock was in this case so left in charge; and for this reason they abstain, in common with the Justices and the Nautical Assessor, from attaching blame to Captain Clements; but they think it right to express to the Directors their opinion, that the practice is one of very questionable propriety; and to call attention to the 136th section of the Merchant Shipping Act, which requires, that in ships such as the *Wonder*, there shall be two officers, viz.—the Captain and the First or only Mate, possessing certificates. This enactment requires, in fact, that there shall be two persons in each of these vessels whose competency to take charge is ascertained, and who are made specially responsible for their conduct, and it leads to the inference, that one or the other of these persons ought to be constantly in charge of the vessel.

I am, &c.

T. H. FARRER.

To the Secretary of the South-Western Railway Company,
Waterloo Bridge Station.

NAUTICAL NOTES.

Increase of Steam Navigation:—A Parliamentary paper shows, that there has been an astonishing development of steam navigation during the last few years. Thus, the number of steamers engaged in the home trade—the Coasts of the United Kingdom or parts between the limits of the Elbe and Brest—has advanced from 312 in 1849 (with a tonnage of 54,089 tons and 4,442 men employed), to 388 in 1857 (with a tonnage of 92,481 tons and 6,462 men employed); the number engaged partly in the home and partly in the foreign trade, has increased from 20 in 1849 (with a tonnage of 5,539 tons and 262 men employed) to 66 in 1857 (with a tonnage of 20,859 tons and 1,200 men employed); and the number engaged in the foreign trade, from 82 in 1849 (with a tonnage of 48,693 tons and 3,742 men employed) to 445 in 1857 (with a tonnage of 268,023 tons and 17,291 men employed). The general increase has been from 414 steamers, with a tonnage of 108,321 tons, employed in 1849, to 899 steamers, with a tonnage of 381,363 tons employed in 1857. The total number of steamers built and registered in the United Kingdom between 1843 and 1857 was no less than 1,805, and the number built in one year advanced from 46 in 1843, to 228 in 1857. The average tonnage of those built was 133 tons in 1843, and 232 tons in 1857. The proportion of steamers built to sailing vessels was, in 1843, 7·05 per cent., and in 1857, 21·71 per cent.; and the tonnage of the latter has not increased in the same ratio as that of steamers, the average being 118 tons in 1843, and 188 tons in 1857. The more rapid increase of steamers, as compared with ordinary ships, may be further illustrated by the following comparative statement of the total number of vessels employed in the home and foreign trade in 1849, 1853, and 1857:—in 1849—17,807 sailing

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vessels and 414 steamers; in 1853—17,567 sailing vessels and 639 steamers; in 1857—18,429 sailing vessels and 899 steamers. From this it will be seen, that while the increase of sailing vessels employed has been only 3·49 per cent., that of steamers has been 117·15 per cent., and the proportion of steamers to sailing vessels has advanced from 2·22 per cent. in 1849, to 4·87 per cent. in 1857. The 18,429 sailing vessels employed in 1857 had an average complement of 8·21 hands; the 899 steamers an average complement of 27·75 hands. The average tonnage of the sailing vessels employed in 1857 was 207·83 tons, that of the steamers 424·20 tons.

Pilotage:—By a Parliamentary document, shewing the receipt and expenditure of all moneys received by or on behalf of the Trinity House, in respect of Pilots or Pilotage, in the year ending 31st December 1857, it appears that the total expenditure amounted to £10,400 6s 6d, and the receipts to £9,369 17s, being an excess of expenditure over income of £1,030 9s 6d.

Portugal—Decree respecting the Entry of Bales of Merchandize in Ship's Manifest:—A Portuguese Royal Decree, to come into force sixty days after its publication on the 29th of May, in the Portuguese Official Journal, provides that Bales of Merchandize will not be permitted to be imported for consumption in the continental portion of Portugal, and the adjacent islands, unless described in the Ship's Manifest, with all the requirements contained in the regulations forming part of the Portuguese Consular Code; and further requiring, that every package shall show its respective weight, the gross weight only of all packages bearing the same mark being entered upon the Ship's Manifest.

France—Adoption of the New Admiralty Regulations respecting Lights and Fog Signals:—The French *Moniteur* contains an Imperial Decree, which adopts the New Regulations issued by the British Admiralty, respecting the exhibition and use of Lights and Fog Signals by sea-going vessels.

The French Regulations, like the English, are to take effect on and after the 1st of October 1858.

Closing of the Channel separating the Island of Eubœa from Eastern Greece:—With the view of deepening to the uniform draft of 5½ French metres, or about 18 feet English, the Channel which separates the island of Eubœa (Negropont), from Eastern Greece, they have closed the said passage for the present, but they confidently trust that the new works undertaken will not require the closing of the said Channel beyond the month of October next.

St. Petersburg—Notice respecting Samples of Merchandize forwarded by Sea to that Port:—It is notified to persons engaged in commerce with the Port of St. Petersburg,

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that, in order to offer to the merchants of that city, facilities for the receipt of samples of merchandize, forwarded by sea to that port, the Department of Foreign trade of the Imperial Ministry of Finance, has directed that cases and packets containing such samples shall henceforth be subject only to such formalities at the Custom House, as those to which the baggage of passengers is subjected; on condition, however, that such samples shall be accompanied by a list containing the marks and numbers of the cases and packets, as well as the names of the shippers and those of the consignees, and which document is to be certified by the Russian Consular Agent of the port where the shipment takes place.

The Captain of the vessel will be required, upon his arrival at Cronstadt, to deliver to the Custom House authorities, the lists above mentioned, together with his declaration relative to the vessel's cargo.

REWARDS AND TESTIMONIALS.

The following Rewards for saving life at sea have recently been awarded by the Board of Trade, viz.:—

To **Mr. Richard Korsch**, Royal Pilot Commander of a Prussian Life-boat, the sum of £5; and £2 each to the 14 men forming the crew—for their gallantry in saving the crew of the *Ocean Queen*, of Sunderland, wrecked near Pillau, on the 5th April last.

To **James Spence**, Master of the *Queen Margaret* of London, a Telescope; to **James Beaton Robb**, second mate, a silver Medal; to **Thomas Baikie**, Carpenter, **James Sweetmore**, Sailmaker, **George Harris**, **Magnus Neilson**, and **Peter Neilson**, Seamen, the sum of £2 each and a bronze medal, for their gallant conduct in rescuing the crew of the *Heatherbell*, of Shields, abandoned at sea in a sinking state on the 3rd January last.

To Captain **C. C. de Wit**, of the Dutch East India Frigate *Prins Frederick der Nederlanden*, for services rendered in rescuing the crew of the barque *Cumberland*, of Liverpool, discovered in a sinking state on the 11th November last, and landing them at Helder.

A case of Telescopes to **Captain Gifford**, of the American packet ship, *Patrick Henry*, for his humane conduct to the master and crew of the *Athenian*, whom he had rescued from that vessel when waterlogged and wrecked at sea in September 1857.

A Telescope to **Constant Durand**, master of the *Espoir*, of Ostend, for his humane conduct towards portions of the crews of the *William Campbell*, and *Brigand* steamer, when picked up at sea on the 1st May 1858, after their vessels had been in collision.

To the Officers of the Coast Guard and others for rescuing the crew of the *Pearl* of Cork, which was wrecked at Cahore on the 6th April last, as follows:—**William Cuscaden**, chief officer, a silver Medal; **James Dillon**, chief boatman, £2 and a Silver Medal;

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Thomas Saunders, chief boatman; **William Kearney**, **James Mulligan**, and **George Barnes**, boatmen, £2, and a bronze Medal each. **Eney Rinshalo**, **James Neale**, **Joseph Wafer**, **Martin Leacy**, **Walter Mitton**, **John Redmond**, and **James Roole**, fishermen £1, and a bronze Medal each. **John Smith**, **James Doyle**, and **Philip Doyle**, fishermen, 10s, and a bronze Medal each.

A handsome silver Snuff-box, bearing the inscription below, has been presented to **Capt. L. M. Holten**, of the Norwegian brig *Orion*:—"Presented to Capt. L. M. Holten, of the Norwegian brig *Orion*, by Mr. John Potts, jun., late Master of the *Mary* and *Jane*, of Sunderland, as a token of esteem and gratitude for his courageous conduct in saving the Crew of the last-named vessel, whilst she was in a sinking state during a heavy gale in the Grecian Archipelago, on the 21st January 1858."

His Imperial Majesty the Emperor of the French, has awarded **James Doyle**, Pilot, and **Robert Byrne**, Fisherman of Kingstown, a silver Medal each, for saving the lives of three of the crew of the French merchant ship, *France et Bresil*, when wrecked on the Kish Bank, near Dublin, on the 5th December last.

CERTIFICATE CANCELLED.

At a meeting of the Local Marine Board for the port of London, held on the 10th instant, charges of drunkenness were preferred by Messrs. Tyrrell & Lark, owners of the *Plantaganet*, of London, against Samuel Andrew Hatfield, the late master. The charges of gross acts of drunkenness having been proved, the Board of Trade have directed that the Certificate of Competency, No. 7796, of Samuel Andrew Hatfield, shall be cancelled.

CERTIFICATES SUSPENDED.

At a Naval Court, held at the British Consul's Office, Bordeaux, on the 21st May last, John Taylor, mate of the brig, *Jane Thompson*, of Sunderland, official No. 2517, was tried upon charges of insubordination and repeated acts of drunkenness preferred against him by Thomas David, master of said brig. The charges being fully proved, the Court sentenced him to be dismissed the ship. The above having been represented to the Board of Trade, their lordships have been pleased to direct that the Certificate of Service of John Taylor, No. 47,720 (as Master), shall be suspended for twelve months.

At a meeting of the Local Marine Board, for the port of Greenock, on the 25th ultimo, an investigation was held into a complaint made by the owners of the ship *Spartan*, of Greenock, against James Dodds, the mate, for deserting the said ship at Pensacola, during the master's absence at Mobile. The charge of an aggravated case of desertion having been proved, the Board of Trade have been pleased to direct, that the Certificate of Competency as mate, No. 15,276, of James Dodds, shall be suspended for eighteen months.

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CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.
Notice to Mariners, from May 25th to June 25th, 1858.

Russian Lights in the Baltic, Gulf of Finland, &c.—

1. From the commencement of the present year (1858), the LIGHTHOUSES of the GULF OF FINLAND, extending from Cronstadt to Hochland, and further towards the west along the southern coast of the Gulf (*excepting* the Lighthouse of Sourop) as well as the Lighthouses of the GULF OF RIGA, and those of the BALTIC, as far as Lyserort, will continue to be LIGHTED during the SUMMER nights, that is to say, from the 16-28th May until the 1-13th July, which according to the old regulation has not hitherto been done.

It has not yet been possible to apply this new measure to the Lighthouses placed along the coast of Finland, and of the Rocks from Glasholm to Aland; these Lighthouses will therefore not be lighted during the period above mentioned. If, nevertheless, such lighting during the summer nights should be also established, a special notification would immediately be issued.

2. That in consequence of the repairs which are about to be made to the Lighthouse of Sourop, near Reval, that Lighthouse will not be lighted this year during the two months' summer nights from the 16-28th May to the 16-28th July.

3. That during this summer, FLOATING LIGHTS will be placed as follows:—

On the southern coast of the bank of KALBODEGRUND (which is to the south of the Lighthouse of Glasholm); this will be a RED Light in a lantern of eight lamps placed on the top of the central mast. During the day the vessel may be recognised from its Yellow Flag with a Blue Cross, both diagonal and rectangular, and similar to the Flag used for all the Floating Lights, and which is hoisted upon the main topmast. In case of fog, a bell will strike single strokes every three seconds for twenty minutes, after which the striking will be suspended for ten minutes.

To the north of REVELSTEIN (near Reval) the LIGHTHOUSE will have three WHITE Lights placed on the three masts in reflecting lanterns, having each also eight lamps; during the day there will be hoisted at the main topmast a Yellow Flag with a rectangular Blue Cross. In case of Fog a Bell will strike with intervals of five minutes.

Special notifications will make known the period at which these Lights will be established during next summer, and also the period when they shall be removed.

All the LIGHTHOUSES OF FINLAND (with the exception of that of Logscher, which is being rebuilt) will be LIGHTED at night during the summer of the present year, 1858, from the 16-28th May to the 1-13th July.

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Scotland—E. Coast—Green Light at the entrance of the Elgin and Lossiemouth Harbour:—From and after the 1st July 1858, a STATIONARY GREEN LIGHT will be shown from sunset to sunrise, on the South Pier Head, at the ENTRANCE of the ELGIN AND LOSSIEMOUTH HARBOUR. The Light will be placed at the height of 30 feet above the sea level at high water.

South Atlantic—Rio de la Plata—Fixed Light on Lobos Island:—After the 5th of April 1858, a Light would be exhibited from a Lighthouse on Lobos Island, off Maldonado, on the north side of the entrance to the River Plata.

It is a Fixed White and Red Light (?) placed at an elevation of 84 English feet above the level of the sea, and should be visible in clear weather from a distance of about 14 miles.

The Lighthouse stands on the N.W. extremity of the Island, in about lat. 35° 1½′ S., long 54° 52½′ W. of Greenwich.

Variation 9½° *E.*

South Atlantic—Rio de la Plata—Light Vessel off the English Bank:—A Light vessel has been moored off the North spit of the English Bank, in the entrance of the River Plata.

It is a Fixed White Light, visible in clear weather from a distance of 11 miles.

The vessel lies in 7 fathoms water, with the Mount Video N.W. by W.⅔W.; Flores island N. by W.¾W.; and the Sugar Loaf N.E.½E.; her position being in about lat. 35° 6′ S., long. 55° 54′ W. of Greenwich.

Bearings Magnetic. Var. 9½° *East in* 1858.

Scotland—W. Coast—Beacon on Goblach Reef:—A malleable iron frame Beacon has been erected on the Seaward termination of the Goblach Reef. This Reef extends southwards from the Island of Pabba, in the Inner Sound of Skye, towards the mainland of the Island of Skye.

Vessels must on no account pass between the Beacon and the Island of Pabba.

Orkneys—South Walls—Revolving Light on Cantick Head:—On and after the 15th July 1858, a Light will be exhibited from the lighthouse recently erected on Cantick Head, the south-eastern extremity of South Walls, Island of Hoy, Orkneys.

It will be a White Revolving Light, showing a Flash once every minute. It will be placed at an elevation of about 115 feet above the sea at high water, and should be seen in clear weather from the deck of a vessel at a distance of about 16 miles.

The light tower, which is 60 feet in height, will, together with the keeper's houses, be painted White. Lat. 58° 47′ 15″ N.; long. 3° 7′ 45″ W. of Greenwich.

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Ireland—W. Coast—Buoy on Bullockmore Rock—Donegal Bay:—A Black Conical Buoy has been placed in 11 Fathoms at low water spring tides, at about 3 cables' length West of the Bullockmore Rock, which lies off St. John's Point, Donegal Bay, with the following marks and compass bearings:—

St. John's Point Lighthouse, E. by S.$\frac{3}{4}$S.; Rotten Island Lighthouse, N.E. by E.$\frac{1}{2}$E.; Drumanoo Point, N.E.$\frac{1}{4}$N.; Fintragh House, *its apparent length* on Roscorcan Point, N.E.$\frac{3}{4}$N.; Carrigan Head, N.W.$\frac{3}{4}$N.

Ireland—East Coast—Change of Buoy on Imogene Rocks—Dundalk Bay:—The position of the Buoy marking the Imogene Rocks, that lie off Cooley Point Dundalk Bay, has been changed, and now lies in 7$\frac{1}{2}$ fathoms low water spring tides, about $\frac{2}{3}$ of a mile S.W. by S. of its former position; with the following marks and compass bearings:—

Helly Hunter Buoy, E.N.E.; Cooley Point, N. by W.; N.E. end of Rathcor village, touching Templeton Point, N.W.$\frac{3}{4}$N.

Ireland—E. Coast—Buoy on Codling Bank, Coast of Wicklow:—A Black Spiral Buoy, surmounted by a Staff and Globe, and marked Codling Bank, has been placed in 8 fathoms at low water spring tides, off the S.E. end of the Codling Bank, with the following marks and compass bearings:—

Carrickgollogan hill in one with Bray Point..	N.W.$\frac{3}{4}$N.
Great Sugar Loaf.....	N.W.$\frac{1}{4}$W.
Wicklow Head.....	W. by S.$\frac{3}{4}$S.

Archangel—Erection of New Beacons at the Entrance of the Northern Dvina, White Sea:—Instead of the former Beacons, placed upon a common line, on the Berezov Bar, at the mouth of the Northern Dvina, upon the west bank of the Island of Moudiuga, to indicate the direction of the Channel, and which Beacons were removed during the late war, two new Beacons have been placed during the summer of 1857 upon the S.W. point of the Island above mentioned.

The first or northern Beacon, which is nearest to the sea, shows a three-faced tower, forty-two feet in height from its base to the summit of the roof; this tower is painted with 3 perpendicular stripes, of which the side ones are Black, and the middle one White and prolonged over the roof, which is painted Red.

The second or southern Beacon, consists of a mast, forty-two feet in height from the base to the summit. Above this mast is raised a topmast 28 feet high, making the total height 70 feet from the base to the truck. The topmast above mentioned carries at its summit 3 Black Globes. The distance between the two Beacons is about 3$\frac{1}{2}$ cables; bearing from each other N. 43° W. and S. 43° E.

The White stripe of the northern Beacon in one with the mast, indicates the direction of the Channel, across the shoalest part of the

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Bar of Berezov, between the Black and Red Buoys; the Black Buoys should be left to the N.E. and the Red Buoys to the S.W.

The common line of the two Beacons above named, may also be of great assistance to pilots, who in consequence of bad weather, or other circumstances, or when the Buoys may have been displaced by tempest or by the passage of a vessel, should not be able to direct their course towards the vessel requiring them.

An opening has been cut in the forest between the southern Beacon, that is to say of the 3 Black-Globed mast, and the Light-house of Moudiuga, in the direction N. 17½° W.

Variation in the White Sea 4¼° *E. in* 1855.

NEW BOOKS.

NAVIGATION AND NAUTICAL ASTRONOMY, in Theory and Practice; with attempts to facilitate the finding of the Time and Longitude at Sea. By J. S. YOUNG, formerly Professor of Mathematics in Belfast College. London: J. Weale. Price 2s.

NEW BOOKS PUBLISHED BY THE ADMIRALTY :—	s.	d.
WHITE SEA, SAILING DIRECTIONS FROM THE DOWNS to,— 1858	1	0
BRITISH LIGHTS. Corrected and Edited by Commander Dunsterville, R.N.—to June 1858	1	6

NEW CHARTS.

Published by the Hydrographic Office, Admiralty, in June 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
England, W. Coast.—Holyhead Bay. Late Admiral F. W. Beechey, R.N. 1857	3	0
Holland.—Zuider Zee, from Dutch Charts. 1857	3	0
Africa, W. Coast.—Bonny and New Calabar. Corrected 1858	2	0
Africa, W. Coast.—Corisco Bay. Corrected 1858	2	0
California.—Sheet 2. Corrected to 1857	1	6
Red Sea.—Perim Island. Lieut. H. Lamb, I. N. 1857	1	0
China.—Macao Harbour. Corrected to 1858	2	0
New Zealand.—Entry Anchorage, Porirua Harbour and Mana Island. Capt. Stokes, R.N. 1850	1	6

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

AUGUST 1858.

SAILING DIRECTIONS FOR PORT JACKSON—AUSTRALIA.

[For Particulars of the New Lights, see "List of Lights," page 255.]

Approach and Entrance:—Vessels approaching the harbour having made the High Lighthouse should keep it within bearings from N.W. to S.S.W., which will leave the Low Lighthouse open, and ensure its being seen when within its radius. Care must be taken not to shut the High Lighthouse in with the cliffs south of it, which it will do if brought to the northward of N.W by N.—nor close it in with the North Head, which it will do if brought to the south of S. by W.½W.—the latter bearing being the guide to clear the extremity of Long Reef. The entrance of the harbour lies betwixt the Signal Station Cliff and the North Head, the distance between them 1¾ miles, which contracts betwixt the Inner North Head and the Reef extending from the base of the Low Lighthouse erected on the Inner South Head to ¾ of a mile, and is further contracted about 300 yards in the Channel between the tail of the Reef and the precipitous Middle Head, which bears W.N.W. from it.

Directions for Entering by the Western Channel:—To preserve a weather guage, ships entering with winds from the southward or eastward should pass as close as possible to the tail of the Reef, which extends 450 feet from the base of the Low Lighthouse. On this Reef the sea always breaks. With a commanding breeze the breakers may be passed within a cable's length, in 8 fathoms, care being taken not to close the High Lighthouse with the cliffs north of it (which it does on the bearing of S. by E.) until the Low Lighthouse bears S. W., and the two White Obelisks on the western shore are brought in one, on a bearing of W.½S., which course will clear a dangerous 16 feet patch, lying 800 yards west of the Lower Lighthouse, and should be steered until Elizabeth Mansion. an imposing

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white square building with round dome, closes behind Bradley's Head, bearing S.W.$\frac{3}{4}$S. A.S.W.$\frac{3}{4}$S. course must then be steered (carefully keeping Elizabeth Mansion just closed over the low part of Bradley's Head, and leaving the Lightship at about a cable's length on the port hand), until the High Lighthouse has opened its own breadth north of the Red and White chequered Obelisk below it, on the bearing of S.E. by E.$\frac{1}{2}$E., when the ship will have passed the shoal and deepened her water to 9 fathoms, and may safely proceed up the harbour and choose her anchorage by giving either shore a berth of a couple of cables' length. Beating up the Western Channel the deep water will be found on the western shore with the exception of a small shoal patch, having 18 feet on it, which lies in Obelisk Bight, in a line betwixt George's Head and Middle Head, 500 yards from the former. Avoiding this patch, you may make free with the western shore to within half a cable's length, but in standing over to the opposite eastern side, beware of the 16 feet patch before alluded to as lying west of the Low Lighthouse; to avoid it do not bring the Lightship to the westward of S. by W.$\frac{3}{4}$W. Betwixt George's Head and the upper south-western tail of the Sow-and-Pigs shoal, the Channel is contracted by an 18 feet detached bank to the width of about 350 yards; to clear this the Lightship must not be brought so far to the westward as to bring her and the Obelisk on the North Head in line until the High Lighthouse is open at least its own breadth north of the chequered Obelisk below it; when you will be past the shoal and be able to work up with plenty of room in from 9 to 16 fathoms water.

Vessels of lighter draft than 15 feet can pass over these two shoal patches, and the upper portion of the Sow-and-Pigs shoal, and stretch right across from shore to shore by not, when passing to the southward of the Lightship, coming nearer to her than two cables' length, or not before the line from George's Head to the north Obelisk on the eastern shore bearing E.$\frac{1}{2}$ S. is passed, remembering that the deepest water over the Sow and Pigs, 22 feet, is obtained by closing Elizabeth Mansion behind Bradley's Head, and keeping the high Windmill which stands on the heights east of Elizabeth Mansion, a sail's breadth open of the head.

Having cleared the Sow-and-Pig shoal the navigation up the harbour is free from obstructions, with the exception of a ledge extending a cable's length from Bradley's Head, and a Reef of the same extent off Shark Island, the first island that will be approached. A knoll, which lies 500 yards west of the Bottle and Glass (conspicuous rocks forming the south boundary of Watson's Bay), having 4$\frac{1}{2}$ fathoms on it, cannot, of course, impede a ship which has passed through either of the channels. It is, therefore, only necessary to keep at a cable's length from the shore, and when anchoring to take a berth which will admit of a long scope being veered to southerly squalls.

The following schedule of courses, distances, and soundings, will show at a glance, the nature of the navigation in the Western Channel,

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commencing from the position where the Lighthouse touches the cliffs north of it, and the two western Obelisks are in one :—

COURSES.	DISTANCES.	SOUNDINGS.
1st—W½S.	½-mile and 100 yards	From 8 to 7 fathoms
2nd—S.W. by S.....	⅔ of a mile	7 to 4 fathoms, and then suddenly to 21 feet
3rd—S.S.W. to abreast Bradley's Head	1¼-miles	21 & 20 feet, and deepening rapidly to 6, 10 & 13 fms.
4th—To Sydney West, passing Fort Denison on either hand.....	1¾-miles	Gradually shoaling from 13 fathoms to 7

Directions for Entering by the Eastern Channel:—Now that Obelisks have been erected as leading marks for the Eastern Channel, it may, in particular cases, be advisable to pass through it, although on account of its limited width in several parts, and the necessity when entering it from seaward, for suddenly changing the course at right angles, it presents less advantages than the Western Channel. It may, however, be safely navigated by attending to the following instructions :—

First, as in the case for the Western Channel, to clear the south Reef you must pick up the line of the two western Obelisks in one, W. ½ S., and immediately after passing two cables' length on that course westward of the meridian of the Low Lighthouse two Obelisks, at high water level, on the strand of the eastern shore will suddenly unmask, bearing S. ¼ E. when they come in one, which they will do very rapidly, haul sharp up for them, carefully preserving them in line for the first quarter of a mile, until on your port quarter you observe the North and Inner South Heads locking, when you may edge off and pass the northernmost of the two Obelisks at half a cable's distance, taking care not to open the Obelisk on the slope of the North Head (after having once closed it with the Inner South Head) until you observe the spire of St. James' Church (the only spire which makes out in Sydney), it's breadth open of Bradley's head S. W. ¾ W. When the high Lighthouse is seen to the northward of the chequered Obelisk, you are above the Sow-and-Pigs shoal, and may bring up in safe anchorage, or proceed up the harbour, there being no obstructions to the navigation except the reefs off Bradley's Head and Shark Island, mentioned in the directions for the Western Channel.

Entering in the Night:—Vessels approaching in the night with southerly or westerly winds, should keep the sea until daylight, but with winds from the northward or eastward, and favourable weather, they may safely enter, observing the following directions :—

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The Revolving Light having been made, it should be kept between the bearings of N.W. and S.S.W. ½ W. until the Lower Fixed Light appears in sight, this Light being brought to bear W. by S., a course should be shaped to pass a cable's length to the northward of the breakers on the Reef extending from it, in 9 fathoms water, which depth is found at a distance of about 450 yards from the Lighthouse. After the meridian of the Low Light is passed, and it has been brought to bear to the eastward of south, a W. by S. course may be steered until the Floating Light bears S. by W. ¾ W., when a course should be shaped so as to leave the Lightship a cable's length on the port hand. After passing the Lightship, the course is S.W. by S., until the Revolving Light bears E.S.E., when you will be above the Sow-and-Pigs shoal, and have deepened the water to 10 fathoms, and by hauling up S.E. for a quarter of a mile, will find convenient anchorage in 8 or 9 fathoms, sandy bottom; or may proceed further up the harbour, taking care to avoid vessels and boats lying in the way.

Anchorages within the Heads:—Ships of large tonnage, or drawing more than 18 feet, ought not, with a fresh head wind, to attempt to work through the narrow Channels between the Sow-and-Pigs shoal and the shore, neither should they anchor to the northward of the Lightship, with the Heads open, but rather bear up for Spring Cove, or North Harbour, in which safe anchorage may be found. Spring Cove, where the Quarantine station is established, is a small bay (capable of containing four or five moderate-sized ships) on the western side of the promontory forming the North Head of Port Jackson, and lies due north from the Inner South Head Lighthouse. Vessels seeking shelter in it should bring this Lighthouse to bear S. by E. before the North Head is closed with the Inner North Head about E. ½ S. when they must steer a course about N. by W., passing at a cable's length distance the hummocky point, with a flagstaff upon it, which forms the southern boundary of Spring Cove, when they will be abreast of the anchorage, and may shoot into the bay until the Inner South Head Lighthouse just touches the hummocky point before mentioned, and anchor in 6 or 7 fathoms sandy bottom.

If a ship which has run for Spring Cove should find its limited space so filled by vessels as to prevent her taking up a berth, she may proceed on a course about N. by W. until a quarter of a mile to the northward of the north point of Spring Cove, and then anchor in 6 fathoms at a cable's length from the eastern shore of North Harbour. Here a ship will be sheltered from the sea, which S.E. winds send into the middle and western portion of this harbour.

Strangers to the port may deem it objectionable to run to leeward for a confined anchorage, and those who have not got a pilot had better stand out again, until one can be obtained, unless they feel confident of being able to take in sail smartly, and bring up quickly.

Between Grotto Point and Middle Head, and due west of North Head, lies Middle Harbour, an arm of the sea extending several miles

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in a N.W. direction. It is open to the eastward, and not navigable for vessels drawing more than 9 feet, a bar of that depth running across its mouth. Neither does Hunter's Bay, situated at the entrance to Middle Harbour, afford good anchorage, being open to easterly winds, and the bottom foul.

Tides:—The tides in the harbour of Port Jackson do not run with great velocity, the maximum rate of the ebb being two, and of the flood one and a-half knots. Their course is generally that of mid-channel, except at the entrance, where the ebb tide, running strong near the North Head, leaves a considerable space of slack water to the southward, of which vessels working in can avail, by tacking to the southward whenever the floating Lightship is seen open of the Inner South Head. The times of high-water, full and change, are at the Heads 8 h. 15 m., and at Sydney 8 h. 30 m.; rise and fall 6 feet.

All Bearings herein given are Magnetic, and the soundings those at low water spring tides.

ABERDOVEY—BAY OF CARDIGAN—WALES.

[The following information furnished by Lloyd's Surveyor at Aberdovey may be found useful to some of our readers.]

Aberdovey is about seven miles to the north-eastward of Aberystwith, and five miles southward of the diamond-shaped Beacon of Bwch Head. The harbour is considered to be the best in Cardigan Bay; it is also easily recognized, from the offing, by the gradual slope of the hills at the back of the town, forming the large vale through which flows the river Dovey. The bar is about a cable's length broad, and shifts; at the entrance there is a Black Buoy, and immediately inside is a Red Buoy, both placed in the fairway. When running in, a good look out must be maintained for a small Buoy between those two buoys, as it shows the turning or angle of the Channel, if the sands in their shifting have formed a crooked passage. In bad weather the pilots will row down to as near the bar as possible, when they see a flag hoisted on board a vessel outside for a pilot's assistance, and will exhibit their flag as an indication that there is sufficient water on the bar for a vessel to cross, waving it at the same time to direct the ship into safety.

Anchorage may be obtained at about half a mile within the Red Buoy, and thence to as far as the town. There is room for sixty or eighty vessels of 12 to 20 feet draught, which can ride afloat on good holding ground. At low water spring-tides, the depth on the bar averages 2 to 6 feet; but in winter the depth is greater. It is high water on the days of full and change of the moon at 8h.; springs rise on the bar about 18 feet and neaps 12 feet.

In the vicinity of the entrance, the holding ground is good, from two miles southward to four miles northward of the bar. It is recommended at all times to take a pilot on account of the frequent shifting of the sands forming the Channel.

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A JOURNAL

OF THE

MAGNETIC DEVIATIONS OF THE STEERING COMPASS,

ON BOARD THE WOOD-BUILT SHIP "EDMOND," FROM CALLAO TO ENGLAND, WITH REMARKS

By Capt. C. R.

The following journal was kept by one who has had considerable experience in navigating iron sailing ships, and has applied much attention, in order to facilitate and simplify the mode of checking the errors of the compass at sea. His observations on previous voyages have appeared in the pages of the *Mercantile Marine Magazine*, (see the numbers for the month of March 1855-56-57). He now adds this as the most important of all, shewing clearly the advantage of taking constant observations of the bearing of the sun by the *steering compass alone;* and that it is very requisite to find the corrections to be allowed upon opposite and intermediate courses, even on board *wood-built ships*. He has long been of opinion, that it was not safe to rely too much upon the magnetic courses given in nautical books, or marked upon charts, to which cause may be attributed many losses. It is now generally known, that the binnacle compass is especially liable to a variable error, occasioned by the quantity of iron which forms the steering apparatus, viz.—tiller and blocks, wheel-chain and standards, upper pintle and band, and over all these the massive spindle and fixings, almost in a line with, and frequently too close to the all-important magnetic needle. During a period of many years' experience, he has remarked, that few appeared ever to doubt the correctness of the courses steered by compass after applying the established variation, and making allowance for lee-way, if any. But when a remarkable difference was found by observation between the course given, and the course made good, the Commander would feel vexed, under the conviction that it was occasioned principally by carelessness and inattention to the steering. The mate would put it down to the effect of a current. The set of the Gulf Stream, of the Equatorial and other oceanic currents, is well known and allowed for, but the innumerable and ever-varying sets stated in log-books, are now seldom proved by lowering a boat, and are therefore only conjectured. By observing daily, or frequently, the exact error of the compass, and applying that to the course steered, instead of the printed variation, it will become evident that the influence of local attraction has been the main cause of those differences generally recorded as the effect of current. The *Edmond*, when approaching the Equator, steering N.N.E., from lat. 5° South, and long. 28° West, had the compass error 14° West, and in lat. 1° North, and 30° West, it had

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decreased to 10°. The difference between the course steered, and the course made good, was for many days 24° to the westward. In this instance the effect of a real current was proved by observation, shewing how much was due to that cause, and the surface of the ocean was found to set about 24 miles per day to the W. and N.W. The reliance hitherto placed in compass courses, corrected for variation, arises from implicitly following an old established rule; and in the Merchant Service, the subject of local attraction received very little attention, until it forced itself upon those who had to navigate Iron-built Ships, and Ships carrying iron in quantity. With a general cargo, it frequently occurs, that a Ship steering up Channel in thick weather, inclines more to the right than to the left of the true course, and it is not improbable, that accidents may be traced more to the aberration of the needle than to any other cause. A Merchant Ship is sometimes supplied with an Azimuth Compass, but it will be admitted, that it is not frequently brought into use. It is easy to find the true azimuth, but not so the magnetic. There is an uncertainty attending the use of an azimuth compass at sea, in consequence of the pitching or rolling of a ship. Excepting under very favourable circumstances, a correct result is difficult to be obtained, and comparisons cannot be made with sufficient exactness between compasses placed far apart when the cards are in motion, or the ship indifferently steered. It will be seen from this Journal, that the change of 2 or 3 points in the ship's head occasioned a change of error.

Much unnecesary trouble can now be dispensed with, and a correct result obtained from the Steering Compass alone, by means of the Deviation Detector. It has been mentioned in this Magazine already, but a few words here will show its simplicity and utility. It was invented at sea by Capt. Robertson, and consists of an Index hand, turning upon a centre fitted upon the glass cover of the Steering Compass, and directly over the Card. On the middle of the Index is a Stile, having a joint, by which it can be placed at any angle from the perpendicular, or laid horizontal when not in use. The end opposite to the pointer of the Index is raised; it is painted white, and along the centre from the pointer runs a black line. When in use, the Stile is raised, the Index pointed towards the Sun, and the shadow of the Stile falling upon the black line, the pointer will be exactly over the nearest degree of the Magnetic bearing. This little instrument attached to the Steering Compass, performs the simple operation of shewing at Noon the exact bearing of the Sun, and, consequently, the correction required without any calculation. To obtain this with precision, it is requisite to know before hand, when the Sun will be on the Meridian, by a watch set to the time at Ship. When the Altitude at Noon is not over 60° or 70°, the bearing taken when the Sun has ceased to rise, will prove an easy check upon observations which require calculation.

The Spherograph, invented by Mr. Saxby, will shew by inspection the true bearing of the Sun at any time throughout the day, and

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used with the Detector will afford the readiest method that could be desired to ascertain with certainty, the corrections required upon various courses. The accompanying Journal is the result of adopting this easy method; and the differences thus found, by comparison with the variation as given on the chart, are seen at a glance.

The Admiralty have lately published charts, shewing the ascertained variation by curve lines, and the following note is given upon each chart—"The lines of equal variation are given from the latest observations for the epoch 1855, but as the variation of the compass is undergoing a gradual and constant change, and has not hitherto received the attention from sailors that it deserves, all navigators are specially requested to make observations for the revision and amendment of these lines of variation, and transmit such observations to the Secretary of the Admiralty."

By submitting these remarks and this Journal to sailors, through the pages of the *Mercantile Marine Magazine*, they will see, that in order to carry out the foregoing request with correctness, it becomes absolutely necessary to state the direction of the ship's head at the time of observation for variation, but with every precaution, endless variances will arise from local attraction. It is often remarked that, two compasses placed apart on board ship, are found to differ, therefore, it may reasonably be expected, that two or more ships may be steering the same true course, but sailing upon different magnetic courses. One ship may have the local attraction neutral upon that point of the compass, whilst others may have that influence acting either to the right or left.

To ascertain the change of local attraction upon opposite tacks, the following rule carried out will be found useful and satisfactory. Previous to going about, take an altitude of the sun, and note the bearing shewn by the shadow of the stile upon the index hand: when about, it will be seen that the bearing has altered in consequence of the change caused by local attraction; then work out the true azimuth from the altitude, and the corrections for opposite tacks will be known. With Saxby's spherograph it is more simple, as no altitude is required. The time, the latitude, and declination being given when the bearings were observed, the spherograph will shew the true bearing. Thus, the combined effects of variation and deviation are quickly ascertained. Those who give attention to this practice, will always be as careful to find the corrections to apply to the courses steered, as they are to keep the rate and error of a chronometer.

The Deviation Detector readily proves, whether the steering compass is much or little influenced by local causes. It is only necessary to note the bearing of the sun upon the course steered, then alter the ship's head several points and see if any change of the bearing occurs.

The form of the accompanying Journal can be adopted in the usual Abstract Logs, using some of the columns which are not always filled up, or by drawing extra lines for the purpose.

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Latitude.	Longitude.	Ship's Head by Steering Compass.	Error of the Compass by Observation	Variation on Chart.	Difference due to local Attraction.
° ′	° ′		°	°	°
12 30 S.	78 13 W.	SW.	15 East	11 East	+ 4
13 26	79 35	S. by W.	15 „	11½ „	„ 3½
14 14	80 18	SW.	18 „	11¾ „	„ 6¼
15 17	81 44	SW. by S.	18 „	12 „	„ 6
16 27	83 10	SW.	19 „	12½ „	„ 6½
17 23	84 52	SW.	19 „	12½ „	„ 6½
18 47	86 19	SSW.	18 „	12½ „	„ 5½
20 34	87 44	South	15 „	13 „	„ 2
22 43	88 31	South	16 „	13 „	„ 3
24 43	90 9	South	18 „	13½ „	„ 4½
26 16	90 50	South	18 „	13¾ „	„ 4¼
27 37	91 53	South	18 „	14 „	„ 4
28 50	92 54	South	18 „	14 „	„ 4
30 3	93 42	SSW.	18 „	14 „	„ 4
30 40	93 44	SSE.	13 „	14 „	— 1
32 28	93 40	South	15 „	14½ „	....
33 39	92 14	SE.	10 „	15 „	„ 5
33 48	92 27	WSW.	18 „	15 „	+ 3
....	....	SE.	12 „	15 „	— 3
35 8	91 38	SE.	12 „	16 „	„ 4
36 53	91 5	South	15 „	16¾ „	„ 1¾
38 5	90 32	South	16 „	17 „	„ 1
41 9	89 15	South	16 „	19 „	„ 3
44 51	88 50	S. by E.	21 „	20½ „	....
46 0	88 32	SSE.	21 „	21 „	....
50 22	87 42	SE. by S.	18 „	22½ „	„ 4½
51 53	85 25	SE. by E.	18 „	23 „	„ 5
52 50	82 0	SE.	18 „	23½ „	„ 5½
54 50	79 30	ESE.	18 „	24 „	„ 6
56 15	76 21	ESE.	20 „	24 „	„ 4
56 51	72 50	East	21 „	24 „	„ 3
57 47	68 44	E. & NNE.	22 „	23½ „	„ 1½
55 14	58 51	NE.	20 „	19 „	+ 1
54 40	56 42	NE.	20 „	18 „	„ 2
50 51	51 58	NE.	16 „	14 „	„ 2
50 2	49 21	NE.	14 „	12 „	„ 2
48 8	46 44	NE.	11 „	9½ „	„ 1½
46 53	43 46	NE.	9 „	7 „	„ 2
45 54	42 40	North	3 „	5½ „	— 2½
....	....	SW.	6 „	5½ „	....
....	....	East	8 „	5½ „	+ 2½
45 4	37 18	E. by N.	5 „	2 „	„ 3
44 23	35 10	NNE.	2 „	1 East	„ 1
43 40	34 52	N. by W.	5 „	....	„ 5
....	....	N. by E.	2 East	....	„ 2
43 8	34 45	NW.	6 West	0½ West	„ 5½
....	....	NE.	3 „	0½ „	„ 2½
41 57	33 15	ENE.	3 „	1¼ „	„ 1¼
40 34	31 40	NNE.	3 „	3 „	....
37 46	31 47	NNE.	4 „	4 „	....
37 3	31 30	NNE.	4 „	4 „	....
35 52	31 0	NNE.	5 „	4½ „	....
34 50	30 44	North	8 „	6 „	„ 2
33 18 S.	31 50 W.	N. by W.	9 „	6 „	„ 3

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Latitude.	Longitude.	Ship's Head by Steering Compass.	Error of the Compass by Observation	Variation on Chart.	Difference due to local Attraction.
° ′	° ′		°	°	°
32 48 S.	32 30W.	NNW.	10 West	5 West	+ 5
32 20	32 52	N. by W.	9 „	5 „	„ 4
31 55	33 12	ENE.	2 „	5 „	„ 3
31 8	32 20	NE.	5 „	5½ „	— 0½
28 54	27 10	NNE.	10 „	9½ „	+ 0½
27 27	26 20	NNE.	11 „	10 „	„ 1
26 57	26 0	NNE.	13 „	10½ „	„ 2½
25 40	26 0	N. by E.	14 „	11 „	„ 3
23 54	26 35	....	12 „	11 „	„ 1
21 30	26 40	....	12 „	11¼ „	„ 0¾
19 40	26 50	....	13 „	11¼ „	„ 1¼
18 0	27 15	NNW.	15 „	11½ „	„ 3½
16 30	27 30	N. by E.	13 „	11½ „	„ 1½
15 0	27 47	NNE.	13 „	11½ „	„ 1½
13 0	28 23	NNE.	14 „	10¾ „	„ 3¼
11 0	28 23	....	13 „	11 „	„ 2
9 5	28 5	....	12 „	11½ „	„ 0½
7 8	27 55	....	13 „	11¾ „	„ 1¼
4 49	27 52	....	14 „	12 „	„ 2
3 0	28 0	....	14 „	11¾ „	„ 2¼
1 36	28 30	North	14 „	11½ „	„ 2½
0 0	29 10	..	12 „	11½ „	„ 0½
1 0 N.	29 53	NNE.	10 „ }	11 „	— 1
....	....	NNW.	14 „ }	11 „	+ 3
1 44	30 22	North	14 „	11 „	„ 3
2 42	31 34	NNW.	15 „	10½ „	„ 4½
4 12	33 10	....	15 „	9¾ „	„ 5¼
5 45	35 8	....	11 „	8¾ „	„ 2¼
7 30	36 52	....	11 „	8½ „	„ 2½
9 6	38 44	....	10 „	7¾ „	„ 2¼
10 37	40 12	....	10 „	7¼ „	„ 2¾
12 15	41 46	....	10 „	7¼ „	„ 2¾
14 10	42 50	N. by W.	8 „	7 „	„ 1
15 56	43 40	North	7 „	7½ „	....
17 56	44 53	N. by W.	7 „	8 „	— 1
19 36	46 12	NNW.	9 „	8¼ „	+ 0¾
21 4	47 0	N. by W.	8 „	8¾ „	— 0¾
22 13	48 18	....	7 „	8¼ „	„ 1½
23 0	48 37	NE. by N.	0 „	8¾ „	„ 8¾
23 40	48 48	NNE.	2 „	9¼ „	„ 7¼
24 0	48 38	NNW.	7 „	9¼ „	„ 2¼
24 40	48 55	NNE.	2 „	9¾ „	„ 7¾
25 30	48 30	NW.	12 „	10 „	+ 2
26 18	49 0	North	4 „	10½ „	— 6½ -
28 32	50 0	NNE.	3 „	12¼ „	„ 9¼ -
30 30	49 40	....	5 „	12¾ „	„ 7¾ -
31 50	49 25	....	6 „	14 „	„ 8 -
33 44	48 34	NE. by N.	6 „	16 „	„10 -
36 4	47 10	NE.	8 „	18½ „	„10½ -
37 31	45 8	NE.	12 „	20¾ „	„ 8¾ -
38 10	44 30	E. by S.	19 „	21¾ „	„ 2¾ -
39 14	43 20	ENE.	19 „	23½ „	„ 4½ -
40 44	41 12	ENE.	22 „	25½ „	„ 3½ -
42 12	39 10	ENE.	26 „	27 „	+ 1

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Latitude.	Longitude.	Ship's Head by Steering Compass.	Error of the Compass by Observation	Variation on Chart.	Difference due to local Attraction.
° ′	° ′		°	°	°
43 3 N.	37 5 W.	ESE.	28 West	28 West	....
44 15	35 18	E. by N.	29 „	29 „	....
47 25	29 4	E. by S.	30 „	32½ „	— 2½
47 58	25 22	ESE.	30 „	32½ „	„ 2½
48 35	21 15	ESE.	30 „	31 „	„ 1
49 17	17 16	E. by S.	28 „	30 „	„ 2
50 14	13 38	E. by S.	28 „	29 „	„ 1
51 2	9 56	ENE.	24 „	27 „	„ 3
50 38	7 18	South	21 30′ W	24 20′ W	„ 3
49 48	5 4	E. by S.	25 „	24 20′ „	+ 0¾
50 7	3 21	East	23 „	24 15′ „	— 1¼
50 25	2 0	ESE.	23 46′ „	23 30′ „	....
....	....	South	19 30′ „	23 30′ „	— 4
50 35	0 0	ESE.	21 „	23 „	„ 2
51 24 N.	1 24 E.	NW.	21 „	23 „	„ 2

The signs + and — in the table merely show how much the Compass error by observation is more (+) or less (—) than the variation given on the Chart.

[We have given the Paper of our Correspondent, without any material alteration, and shall find it useful in some remarks we propose to make in our next Number, on "Ships' Compasses and Observations at Sea;" we shall then point out *where* and *why* we differ in some of the views expressed on the subject.—Ed. *Mer. Mar. Mag.*]

HARBOURS OF REFUGE.

(Continued from page 205).

With regard to the formation of a Harbour of Refuge at Wick, your Committee thinks it necessary to state, that the Commissioners for the present harbour, in connection with the Fishery Society, have it in contemplation to enlarge the present harbour, and are prepared to expend a sum of £45,000 thereon; the inadequacy, however, of the proposed plan and improvement for the objects required, has been strongly pointed out by the officers of the Admiralty, and especially in the evidence of Captain Vetch, who produced a plan to the Committee by which the objections would be obviated, and sufficient accommodation secured for all the objects of the harbour, whether for the purposes of fishing, of trade, or of a naval station, at a cost estimated by Mr. Coode, the officer in charge of the works at Port-

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land, not to exceed £186,000. It is understood that the Fishery Society is ready to apply the sum at their command towards this large work, in place of expending it upon the smaller work contemplated. The harbour proposed by Mr. Stephenson, at Peterhead, would enclose a space of 200 acres at low water, and of 100 acres within the three-fathom line, and is estimated by him to cost £335,000. The plan proposed by Mr. Abernethy for the improvement of Fraserburgh he estimates would cost £80,000, and would furnish a sheltered area of 11 acres for vessels drawing 20 feet and upwards, and about 20 acres for vessels of a less class.

SECOND.—THE NORTH-EAST COAST OF ENGLAND.

7. It appears in the evidence taken by your Committee that between St. Abb's Head and Flamborough Head, a distance of about 150 miles, every harbour along the coast, without any exception, has a bar at its entrance, more or less dangerous; and that none of them can be entered at low water. This coast includes the important ports of the Tyne, the Wear, and the Tees, besides those of Berwick-upon Tweed, Blyth, Hartlepool, Seaham, Whitby and Scarborough. Having reference to the great and rapidly-increasing traffic to and from the ports included in this line of coast, and to the number of casualties upon it, your Committee cannot hesitate to express its opinion that this portion of the coast urgently demands the earliest consideration, with a view to lessen the enormous loss of life and property which annually occurs upon it, a great mass of which, as Mr. Calver has stated, arises simply from the want of a Harbour of Refuge in times of emergency. Captain Sullivan has shewn that the entire tonnage of British sailing-vessels annually clearing coastways from ports in England was 8,162,000 tons, and coastways and foreign 15,796,000 tons, and that of these quantities, the tonnage from the five ports of Newcastle, Hartlepool, Sunderland, with Seaham, Shields, and Stockton, clearing coastways, was 3,733,000 tons, and coastways and foreign together, 5,160,000 tons, so that the tonnage of these five ports represents fully 45 per cent. of the whole coasting trade of England, and fully 32 per cent. of the entire trade, coasting and foreign together. With regard to wrecks, Captain Washington states, that he has computed that one-half of the whole occur on the east coast of Great Britain, and fully one-half of that number between the Frith of Forth and the Humber; this would represent at least 25 per cent. of all the wrecks on the coast of the United Kingdom, as occurring within that limit. Great and praiseworthy efforts have been, and are being made to improve the approaches to some of the existing harbours on that coast, and especially at the mouth of the Tyne; but these are works more applicable to the special purposes of the ports in connection with them than to a general Harbour of Refuge so much required. With a view to such a work, Captain Washington says; "Tees Bay is the focus of wrecks on the east coast of England, and this bay includes Hartlepool, Stockton, and

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Redcar; and he has no doubt that some part of Tees Bay is the best spot for such a national work. But while his impression is in favour of Hartlepool, which has been reported upon to the Admiralty by the late Mr. Rendel, yet it would require further consideration whether Hartlepool or Redcar, or which side of the bay, should be adopted. Captain Vetch and Mr. Calver both concur in his recommendation of Tees Bay as the best locality, and of Hartlepool as the most eligible spot. It appears that, "at the instance of the Port and Pier Commissioners, the late Mr. Rendel was ordered to examine carefully into the subject of a Harbour of Refuge at this point, and that he reported strongly in favour of a harbour, by running out piers on the north and south side of the bay; the plan enclosed an area of 470 acres, having a depth of 12 feet and upwards, and of 325 acres having a depth of 18 feet and upwards at low-water spring tides; of which the estimated total cost was £800,000, and the period required for completion about six years." Captain Vetch has, however, suggested that a breakwater, open at both ends, and placed in front of the entrance to the harbour, in somewhat the same form as the breakwater in Plymouth Harbour, would in many respects be preferable. The only other point of this coast which has been much urged upon your Committee as suitable for a Harbour of Refuge, as distinguished from the local requirements of individual ports, is Filey Bay, about half-way between Flamborough Head and Scarborough; and the arguments and facts put forward by Mr. Coode as an engineer, and by mariners who have long navigated that coast, are, in the opinion of this Committee, well worthy of being carefully considered before any final decision is arrived at upon the subject. It is stated by these witnesses, that most of the vessels that are lost upon that part of the coast are laden vessels on their way southward; that they seldom leave their ports except with a fair wind, which carries them up as far as Flamborough Head, where, when overtaken by an adverse wind, they congregate in great numbers, sometimes as many as 300 or 400 at a time, causing frequent collisions, and in the last extremity are driven back to seek shelter in one of the ports to the northward, and that it is in the attempt to reach those ports that they founder at sea, or are lost in the attempt to cross the bars which encounter them at the entrance to all the harbours northward to the Forth. It is even stated that vessels frequently put back from Flamborough Head as far as the Frith of Forth; and it is contended that a harbour at Filey would afford the best means of sheltering such vessels, and of avoiding the serious losses now sustained. It is, however, necessary to observe, that there is some difference in the evidence as to the proportion of losses of laden ships, to which this argument applies, and of light ships. Mr. Coode states that a breakwater, including the rocks of Filey Brigg, of 3,200 yards, would give an area of 200 acres, sheltered from every wind, with water deep enough for a line-of-battle ship; of 348 acres of a depth of three fathoms and upwards; of 403 acres of a depth sufficient for the largest colliers; and of 427 acres of one fathom and upwards,

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which would be suited for fishing boats—all equally sheltered from every wind. He estimates the cost at £860,000. This plan appears to have received less attention than the one for constructing a Harbour of Refuge in Tees Bay, but, for the reasons named, your Committee is of opinion that it merits further investigation; but whatever point may be decided upon competent authority as the best, your Committee desires to express its strong opinion, that a Harbour of Refuge on this part of the coast, of dimensions suitable to its large and rapidly-increasing traffic, is urgently required.

THIRD.—THE COAST FROM LAND'S END TO HARTLAND POINT, AND THE BRISTOL CHANNEL.

8. In considering this part of the coast, your Committee draws a distinction between the part extending from the Land's End to Hartland Point, and that further up, embracing the whole of the Bristol Channel on both sides. The evidence goes to show that the part of the coast up to Hartland Point is frequented chiefly by small coasting vessels; it is shown that out of 3221 casualties, 2648 happened to vessels under 200 tons, 367 to vessels between 200 and 350 tons, 93 to vessels from 350 to 500 tons, and 113 to vessels above 500 tons. On the other hand, the Bristol Channel is frequented by foreign-going ships, rapidly increasing in number, and of large tonnage. With respect to the first of these two divisions, the two points most strongly recommended to your Committee for the construction of a Harbour of Refuge within this district are St. Ives and Padstow. The points in the Bristol Channel to which the attention of the Committee has been chiefly drawn, as offering the best security for the Shipping frequenting it, are the Mumbles Head, Lundy Island, and Clovelly. Mr. Abernethy, who thinks that the Mumbles is the most important point for a Harbour of Refuge for the Welsh coast and the Bristol Channel, produced a plan, by which he proposed to construct two breakwaters, together of the length of 1760 yards, at a cost of £370,000, and which would afford a harbour of an area of 200 acres, with a depth of four fathoms at low-water spring tides, sheltered from all winds. On the other hand, it has been strongly contended by other witnesses that Lundy Island is the best point. Much difference of opinion has been expressed before your Committee as to the respective merits of these places, and they will require a much more minute investigation than could possibly be given by your Committee before any point is actually decided upon. Your Committee would only further state upon this part of the subject that, judging by the state of things which has arisen in the crowded coal ports of the north of England, any place which is finally determined upon for affording refuge to ships frequenting the Bristol Channel should have special reference to the rapid development of the coal and iron fields in South Wales, and to the increasing sea traffic which is arising therefrom.

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FOURTH.—THE COASTS OF IRELAND AND THE ISLE OF MAN.

9. The chief points on the coast of Ireland to which the attention of your Committee has been directed with a view to afford shelter for vessels in distress are Carlingford Bay, the Skerries, near Portrush, Waterford, and Wexford, though the latter partakes more exclusively of the character of a private trade harbour. In these places there are already natural harbours, only requiring some improvements in order to render them more available as Harbours of Refuge for passing ships. With respect to Carlingford Bay, Captain Washington is of opinion that an outlay of £20,000, to be expended in the removal of a bar, would make it "an admirable Harbour of Refuge, which would supply all the serious want that is now experienced on the coast between Belfast Lough and Dublin Bay;" and engineers, as well as practical mariners sailing from Liverpool, have given evidence of the most important character as to the great advantages which the foreign trade from Liverpool to America and other places would derive from a harbour at that point. With regard to Waterford, it is similarly circumstanced. It is described by Captain Washington as "a very fine natural harbour, but with a flat or bar having only 12 feet over it at low-water spring tides. To dredge a channel through that to a depth of 18 or 20 feet, at a cost of £20,000, would make it a good harbour." And Captain Washington adds, that "there are no two spots in the whole of the United Kingdom at which good Harbours of Refuge could be got at so small an outlay as at Waterford and Carlingford; £20,000 laid out on each of those would render them available at all times for the greater part of the vessels that navigate the Irish seas." These would especially include the whole of the foreign trade to and from Liverpool, as well as all the other ports on the west coast of England. Your Committee has no hesitation in expressing its opinion in favour of these particular works. With regard to Wexford, your Committee is not prepared to speak with so much confidence. There is no doubt that the expenditure of a sum of about £40,000—and it is understood that there is a sum equal to half of that amount under charge of the Admiralty for this harbour—would greatly improve it; but it appears that even then "it would be available only at tide-time, and then only for vessels of a light draught of water." And besides this, it appears that the sands with which the harbour is beset at the mouth are constantly shifting, so as to change the character of the channel. With regard to the Skerries, Portrush, on the north coast, the circumstances are very peculiar. There is at present a large bay to the eastward of which a high headland stretches northward, so as to form a protection from the east and south-east. From the western side of the bay a chain of rocks, called the Skerries, stretches from the land in the form of a segment of a circle towards the north-east, but with considerable openings at intervals. The prevailing wind on that coast which is most dangerous to the navigation is from the north-west, against which the Skerries form at present a partial protection, and if the interstices in the chain already referred to were

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filled up, the protection would be perfect, and a harbour of the finest and most secure character would be formed, easily enterede at all times, and without risk of detention, as soon as the weather moderated. The facilities for making a first-class Harbour of Refuge at this point are ably and clearly pointed out by Sir John Burgoyne, Sir James Dombrain, and other witnesses; and Mr. Dargan, the emiinent contractor, stated to your Committee that the whole might be accomplished for a sum of £100,000. Two witnesses, who have been in the habit of sailing from the Clyde and Liverpool to America, gave given evidence as to the great importance which a harbour of such a kind would be on the north coast of Ireland, when from the state of the winds it was desirable to go or come north-about; and it appeared that the existence of such a harbour would induce ships to adopt that route much more frequently than they now do, thus relieving to that extent the overcrowded channel round the south of Ireland. Your Committee is of opinion that this is a work well worthy of favourable consideration. With regard to the Isle of Man, Captain Washington speaks of it as "the beacon of the Irish Sea," and is of opinion that a small Harbour of Refuge is required to be constructed outside the present tidal harbour of Douglas. Captain Vetch has stated to the Committee that he has already, at the request of the Admiralty, designed a pier in that situation, and for the purpose named, which would be available for shelter for vessels passing through those seas, as well as a protection to the large herring-fleet frequenting that island; at the same time your Committee thinks it right to state that its attention has been called to Port Erin as a suitable place for a Harbour of Refuge.

10. The various works which your Committee has thus enumerated as being needful purely or mainly for Harbours of Refuge, and which appear to it to be of a character which can only be executed as national public works, and as such, under the direction and control of the government, are—1. A Harbour of Refuge on the north-east coast of Scotland, estimated to cost from £80,000 to £335,000, according to the site that may be selected. 2. A Harbour of Refuge on the north-east coast of England, at an estimated cost of from £800,000 to £860,000. 3. An extension of the present Harbour of St. Ives, at a cost of £174,000,—or if Padstow is adopted, at a cost not exceeding £35,000. 4. A Harbour of Refuge at the Mumbles, or at some place in the Bristol Channel, at a cost of £300,000. 5. An improvement of the Harbour at Carlingford, at a cost of £20,000. 6. An improvement of the Harbour at Waterford, at a cost of £20,000. 7. The construction of a Harbour of Refuge at the Skerries, Portrush, at a cost of £100,000. 8. A pier in the Isle of Man, at a cost of £40,000; making a total not exceeding the sum of £2,000,000; or if spread over a period of 10 years, at the rate of £200,000 a year.

11. Your Committee is desirous to remind the House, that it has not, in the most important instances where Harbours of Refuge are now recommended, ventured to determine the particular spots upon which they should be constructed. The various grounds upon

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which the merits of these different places rest are of a nature necessarily so technical in their character, involving questions of engineering and of nautical skill, as well as matters of fact as to the facilities which the different spots offer for construction by the supply of material and other considerations, that it has appeared to your Committee that they could only be satisfactorily determined by a Royal Commission, composed in part of professional persons, and having the best professional assistance, and in some cases after a full investigation upon the spot. Your Committee has therefore come to the conclusion to indicate only in general terms the localities where these important works are required, and it has no difficulty in strongly recommending that a Royal Commission should immediatety be appointed, with a view of deciding the particular spots within the limits indicated at which it will be most beneficial for the public at large that such Harbours of Refuge shall be constructed. Your Committee is of opinion that, considering that the Harbours now recommended are chiefly with a view to the security and development of the Mercantile Marine of the country, the Mercantile and Shipping Interest should be represented upon such Commission.

12. Your Committee will now proceed to consider the evidence it has taken upon the important financial questions which have arisen in the course of its inquiry as essentially connected with the subject. The estimated cost of the proposed improvements has already been stated as not exceeding £2,000,000; or, if spread over 10 years, at the rate of £200,000 a year. This is no doubt a large sum, but your Committee would respectfully submit that it is comparatively a small one for works having for their object the diminution of danger in the navigation of our coasts, which at present involves an annual loss of lives to a number exceeding 800, and of property to the amount of £1,500,000. Not that the Committee would wish it to be inferred that it is of opinion that the whole of those losses would be obviated by the proposed works; but it is of opinion, that if a considerable portion were prevented, of which there can be no question, the case is strong enough to induce a great effort to be made by Parliament and the Government to accomplish them. Your Committee would remark, that although this large annual money loss, to which reference has been made, is extensively distributed among underwriters, mutual insurance offices, and private shipowners, and is thus not so obvious in its full magnitude at first sight, yet, that it nevertheless constitutes a real abstraction to that amount from the national wealth; and that any expenditure, the effect of which shall be to prevent or mitigate these losses, may fairly be regarded, in a national point of view, as an investment, the value of which is to be judged by the amount of the national saving effected thereby. Regarded from this point of view, and supposing that the important works now suggested were to prevent a loss of property only to the extent of 30 per cent., the whole outlay required would be defrayed by less than four years' saving effected by it. With regard to the saving of life—a question which, in public importance, and as involving the

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necessity of action on the part of Parliament, must be looked upon as one of much greater moment—your Committee would remark, that the proposed works would in all probability be the means of saving a larger proportion than in the case of property. The loss of life is generally the result of total wrecks, and it is that class of casualties that would be most avoided by Harbours of Refuge.

13. But in reverting again to the purely financial part of the subject, your Committee would now consider the evidence which has been given to it, in relation to the justice and the policy of rendering these Harbours in part self-supporting by means of a charge upon shipping. It is no doubt the case, in respect to trading Harbours, that they are as a rule entirely supported by dues levied upon the ships which use them, and that this principle is recognized as being at once a just and beneficial one; just, because those for whom conveniences are made by corporate bodies and others, are bound to pay to the communities at whose cost they are made, a fair remuneration for the service thus conferred upon them; beneficial, because it is only by an equitable arrangement of this kind that communities, whether large or small, can be expected to make these improvements, so useful to the shipping trade. Now, it appears to your Committee, that the principle which distinguishes private-trading Harbours from Harbours of refuge, and which points them out to be the objects of local and private enterprise, is, that they are constructed principally in reference to the wants and convenience of such localities; whereas, Harbours of Refuge upon our open coasts are constructed, not for the use of any individual port, or community, but for the use of all the shipping, both British and Foreign, frequenting or passing our coasts; and it seems, therefore, to your Committee, that the entire community of the country and the Government stand in the same relation to Harbours of Refuge, as individual communities and corporations stand in relation to private-trade Harbours. It has been maintained, that Harbours of Refuge bear much the same relation to shipping as Light-houses; that both are intended for general security and protection, and that both are more useful at times of emergency than at others, and that there is no reason by which the one is made self-supporting by a charge upon shipping, that does not equally apply to the other. It may be contended, that inasmuch as coasting vessels on the sea are now run in competition with railways, there would be a manifest injustice to the owners of the latter, if their competitors were not only placed at an advantage as compared with them, by having their security provided for so as to lessen their risk at no cost to themselves, but that they (the owners of railways) should actually bear the burden as a part of the taxpayers of the community; and this point will appear more clear, when it is considered, that every diminution of risk at sea, operates as a direct money advantage to shipowners, by reducing the amount paid for insurance. In the case of vessels mutually insured by the body of shipowners, as is commonly the practice in the ports in the north of England, every reduction of loss must operate as an immediate money gain; and with regard to those which are insured

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by underwriters, it is well known that the rates are determined by a close calculation of the risk, as shewn by an average of the losses; and it is therefore, in proportion as the average number of losses diminishes, that the charge becomes reduced. In this view it is obvious that the dues paid by shipping for lights, and for Harbours of Refuge, can only be regarded in the shape of an insurance against risk, and as reducing to some great extent than such dues amount to, the charge which would otherwise be made to cover the increased risk if there were no Lights and no Harbours. Capt. Sulivan has shewn, that if the premium of insurance upon colliers between Newcastle and London were, in consequence of the establishment of a great Harbour of Refuge, reduced only by one-twentieth, it would afford a sum sufficient for all purposes to be collected for dues for such Harbour, upon the principle that all vessels for which it was available contributed. Another reason which appears important to your Committee in favour of the view of these works being constructed upon the principle of being in part self-supporting is, that upon that principle there is much greater probability of their being undertaken and carried forward with spirit and speed than if it were attempted to consider them as a charge to be finally defrayed by the public, from the Consolidated Fund; and your Committee is of opinion, that such is the importance of these Harbours to the shipping interest, that it would be infinitely preferable to submit to the small charge which will be necessary for the purpose, than to hazard their postponement for an indefinite period of time; but considering the great services that will accrue to national wealth, as shewn in paragraph 12, your Committee are of opinion that a considerable proportion of the money necessary to construct the works, should be contributed from the public exchequer.

(To be continued.)

OFFICIAL REPORT ON THE LOSS OF THE "AVA."

GREENWICH POLICE-COURT.

MY LORDS—In compliance with your lordships' directions, and with the assistance of Captain W. H. Walker, appointed to act as Nautical Assessor, I have made inquiry respecting the loss of the Peninsular and Oriental Navigation Company's steamship *Ava*, off the coast of Ceylon, on the evening of the 16th of February last, and I transmit herewith the depositions of the witnesses examined before me. I have also to submit for your lordships' consideration the following summary of the evidence, with my opinion thereon:—The *Ava* was an iron screw steamer, of 933 tons register, barque-rigged, with three masts, and engines of 320 horse-power. She was built at Glasgow in 1855. She was in every respect duly equipped, properly manned, and seaworthy, and the engines in good order. In this condition she left Calcutta on the 10th of February last on her homeward voyage to Suez. She carried the Government mails. Her passengers and crew consisted of about 240 souls, and she had specie on board, value £260,000. She was commanded by Captain Cooper Kirton, aged 30. Captain Kirton has a Master's Certificate of Competency, and has also passed an examination in Steam. He has been 11 years in the employment of the Peninsular

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and Oriental Navigation Company, during the last year in the capacity of Commander, and a part of that time on the Suez line. Captain Kirton has made several voyages in the Indian seas, but this was his first voyage in the *Ava*.

It is usual for these steamers, during their homeward voyage, to touch only at Madras and Point de Galle; but the Government, under their contract with the Peninsular and Oriental Company, possess the right to direct any of their steamers to call at other intermediate ports. Captain Kirton, accordingly, before leaving Calcutta, had been ordered by his Superintendent to land at Trincomalee about £5000 Government treasure. But for this order and the consequent deviation from the ordinary route the course of the *Ava* would not have lain within 50 or 60 miles of Trincomalee, or of the spot where she was subsequently lost. At 4 p.m. on the 15th of February the *Ava* left Madras Roads for Trincomalee. Captain Kirton had applied to the Superintendent of the Company at Madras for permission to leave at 2 p.m., in order that he might reach Trincomalee before nightfall on the 16th. The permission was not granted, in consequence, as he understood, of an objection by the Post-Office Authorities.

At noon on the 16th of February Captain Kirton, by observation, which appears to have been accurate, ascertained the *Ava* to be in lat. 9° 54′ N., long. 81° 10′ E. Her course was then shaped for Trincomalee, steering S. 6° E., true course. At 4 p.m. land was sighted about four points on the starboard bow, the distance being estimated by the Captain at 12 or 13 miles. Captain Kirton had not expected to sight land so soon, and attributing the circumstance, no doubt, correctly, to a westerly current which had carried the ship towards the shore, he had hauled out to S. 10° E. true. At 5 o'clock, finding the current setting in shore westerly at nearly two miles an hour, the Captain hauled her out to S. 38° E. true. He states that, being, according to his calculation, at this time 10 miles from land (the chief officer estimates the distance at eight miles), he thought this course would have taken him off Trincomalee clear of all soundings. At sunset (6 o'clock) the sails were taken down, but the ship continued steaming at full speed upwards of 10 knots an hour. The weather was fine, but cloudy, and land perfectly visible. Her course from 5 o'clock was not altered till half-past 7 p.m., when a Light, bearing S.S.W., was sighted. The Captain and his officers supposed this to be Trincomalee Light, on Flagstaff Point, and, believing himself to be five miles from land, then hauled the ship a point in shore, his object being to run down off the port of Trincomalee within signal distance, to get a boat off to land the treasure. The ship proceeded on at full speed till she was abreast of the Light, when the Captain ordered her to be hauled off four points, the Light then bearing about W. Before she could be hauled off more than two points a rock was seen ahead, which was reported as a boat. The Captain perceived it to be a rock, and immediately gave orders to put the helm hard a-starboard, to stop her, and turn astern full speed. Almost at that moment (7.55 p.m.) she struck on a rock under water, where she remained until she become a total wreck. Every proper exertion appears to have been made by the Captain at and subsequently to the wreck, and his arrangement for the safety of the passengers and crew, and for the recovery of such part of the cargo and specie as was saved, were marked by judgment, skill, and self-possession. It was found at daylight, from the ship's position, that she had struck on a ridge extending three-quarters of a mile from shore, off Rocky Point, about a mile and a-half to the north-west of Pigeon Island, and at a spot 11 miles distant north-west from where the Captain expected her to be.

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He admits that he took no soundings whatever, alleging that he felt certain that he was not within soundings. On being asked to give his own explanation of the loss of the ship he assigns the following causes:—

1. That the current in a W.N.W. direction towards the shore, the rate of which at 5 o'clock he had estimated at about two miles an hour, was, when the ship struck, running at an increased rate of four miles an hour, and had carried the ship out of her course.

2. That the light seen at 7.30 was seen at the time when and in the direction in which Trincomalee Light, on Flagstaff Point, should have been seen by him if he had not been carried out of his course by the current; that he, therefore, mistook it for the Light on Flagstaff Point, which he says it strongly resembled. He further asserts that the Light on Flagstaff Point was not properly lighted on that night; that, if it had been properly lighted and hoisted at the top of the flagstaff, he thinks he must have seen it before the ship struck, and that it would have induced him to alter his course accordingly.

With regard to the current, Captain Kirton was aware, as his evidence shews, "that the currents vary more off the coast of Ceylon than in any other place." Moreover, during the afternoon of the 16th, he twice altered the ship's course towards the east, in consequence of the increasing strength of the current,—at 4 o'clock, when "he was surprised to discover the current,"—and again at 5 o'clock, when "he felt satisfied that it was to the extent of two miles an hour." The evidence of the chief officer is—"The current seemed to me to increase from 4 o'clock, as we came to the southward; it was stronger at 5 o'clock, and still stronger at 6." Yet Captain Kirton kept the ship in the same course from 5 o'clock till he sighted the false light at half-past 7 o'clock. With regard to the light mistaken by the Captain for the Trincomalee Light, the evidence is very contradictory. It is asserted by one of the witnesses (Captain Johnson) that the false light seen by Captain Kirton was a very feeble light, low on the beach, and that it could not be mistaken for the light of a Lighthouse. Captain Haswell, an officer in Her Majesty's Navy, and who has a knowledge of that coast, also states that the light he saw on the beach after the vessel had struck appeared to be about 15 feet high, not steady, and certainly not such a light as could be mistaken for the Trincomalee Light on Flagstaff-point, which stands, or should stand, on an elevation of 206 feet.

On the other hand, it appears tolerably certain, that the Light on Flagstaff-point has been for some time in a most defective state. I beg to call your Lordship's particular attention to the evidence of Captain Gillson on this point. He states it to be "a very troublesome Light—the most troublesome that I ever met with anywhere. Though supposed to be 206 feet above the level of the sea, and to shew a distance of 12 or 15 miles, I could not see it till I got within six miles of it; it then went out." Captain Haswell states, "the Trincomalee Light is a very indifferent light. When I visited it, in September last, it was lying on its pedestal; the whole affair was out of order." And Captain Kirton states that the week after the wreck he saw the lantern (the reflectors of which were covered with a black smoke) standing in the daytime on a brick pedestal, and that he was informed that the machinery for raising it on the flagstaff was out of order. He further states that it had been surveyed and condemned some months before.

On the whole, I doubt whether, so far as the light itself is concerned, Captain Kirton had sufficient means of distinguishing the false light from the true one. But, in truth, neither the strong inshore current, nor the mistake as to the light, nor both these causes combined, would have occasioned the loss of the ship, if the ordinary precaution of taking

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soundings had been adopted by Captain Kirton. The chief officer states that, at 5 p.m. he estimated that the ship was eight miles distant from the land. Now, if the ship was not more than eight miles from the shore at 5 p.m., she was within soundings, for a reference to the chart will shew soundings at that point extend fully eight miles from shore. She must have continued within soundings from 5 p.m. till she struck, at 7. 55 p. m. for a distance of about 30 miles. Probably a single cast of the lead at any time during those three hours would have obtained soundings, and have shown to Captain Kirton that he was gradually nearing a rocky coast, and would have enabled him to avoid the danger.

Captain Kirton asserts that in driving a mail steamer, 'he would much sooner haul off the land out of soundings, than run along the shore close in and lead.' And, no doubt, he is correct, theoretically, in preferring the former course; but when he adds that he thought he was acting on this view, and that he felt so sure of his position as being out of soundings that he considered it would have been useless to heave the lead, I must observe that the present case seems to be pre-eminently one in which, warned by the variable and increasing current that he might be mistaken in his distance, and having in the darkness no other means of verifying his position, there was the greatest reason for adopting the only caution, viz., the use of the lead. He states, 'My object was to get to Trincomalee as soon as possible. If I had stopped to take soundings, I should have lost 24 hours at Galle.' It appears to me that to have taken soundings would not have delayed him in the run to Trincomalee more than a single hour, but I need hardly observe that 24 hours' delay is nothing as compared to the risk of lives and property which would have been avoided by the use of the lead.

Under these circumstances, I am bound to report to your lordships my opinion that Captain Kirton omitted to take proper precautions; that, instead of continuing the ship's course at full speed for two hours after dark, he ought to have slackened speed, to have stopped the ship, and hove the lead. That had he adopted these proper and prudent measures the calamity which followed would have been averted. For these reasons I am of opinion that the loss of the Ava was caused by the default of Captain Kirton, the Master.

I feel that I ought not to close this report without calling your lordships' attention to the fact that, in addition to the evidence of the imperfect and faulty condition of the Light at Flagstaff-point, which is stated to have been 'a source of continued complaint from every ship that came into the place,' I have found it impossible to ascertain the limits within which, when properly lighted and hoisted, the light is visible. It may be worth while to consider whether this should not be more clearly stated in the books and charts published for the guidance of mariners.

I beg to transmit herewith Captain Kirton's Certificate, also several testimonials in his favour. To that from many of the passengers by the *Ava*, after the wreck, I beg to call your lordships' particular attention, as well as to the evidence of Captain James Seward Field to the very high character and great reputation for skill and ability hitherto borne by Captain Kirton. I have the honour to be, my Lords,

Your lordships' obedient servant,

HENRY SELFE SELFE.

To the Lords Commissioners of the Privy Council for Trade.

I concur with this report, W. H. WALKER, Nautical Assessor.

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NAUTICAL NOTES.

Russian Method of determining the Tonnage or Lastage of Ships:—An Imperial decree, establishing the following new system for the measurement of vessels in Russia, states that the rule will be applied henceforth to all Russian vessels without exception: but that with regard to foreign vessels, the method will only be applied in case the Masters are unable to produce either a document establishing their right to hoist the colours, or ship's papers, known in Russia under the denomination of "Titres de propriété du bâtiment," which documents should certify the number of lasts measured by the ship to which they belong. Rules:—

1. Measure in English feet:—*a*. The *length* of the upper deck from the back of the stem to the front of the sternpost: *b*. The *breadth* inside of the under surface of the planking of the same deck, taken amidships; and *c*. The *depth* in the ship's well over the keel from the deck planks to the limber boards. Multiply the three preceding dimensions into one another—that is to say, length, breadth, and depth—and divide the product by 130; the quotient will give the capacity of the ship in tons; and by dividing this quotient by 2, the capacity in lasts will be obtained.

2. If there is a poop on the upper deck, or a light deck above the quarter deck, they must in each case be measured, the *length* inside, the *breadth* amidships, and the *height* between the planks of the decks. Multiply these three dimensions into one another, divide the product by 90, and then divide the quotient by 2; the quotient after the last division must be added to the measurement previously obtained, and the sum total will give the whole capacity of the ship in lasts.

3. Steam vessels are to be measured in the same manner as sailing vessels, but a deduction is to be made from their capacity of three-fourths ($\frac{3}{4}$) of a last for each nominal horse-power of the engine.

Spain—Port of Vigo—Pilotage:—Pilots are in the habit of imposing on Masters of British Vessels by boarding their ships for the purpose of claiming pilotage, although their services are not required; shipmasters are informed that pilotage is not obligatory on vessels entering the Bay of Vigo, and that the Captain of that port has made it known to all pilots of the district, that unless they see the usual pilot signal (Union Jack with a white border) flying on board British ships, they need not offer their services. Shipmasters are recommended, in order to avoid claims on the part of the pilots when their services have not been required, to dismiss the boats from alongside at once, and not to hoist the pilot signal at the pilots' bidding, or even take their boats in tow.

Dardanelles and Bosphorus—Lighthouse Dues:—The collection of the fixed Turkish lighthouse dues on all steamers and sailing ships of friendly powers, passing through the Straits of the Dardanelles and the Bosphorus, was to commence on the 10th—22nd

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June instant, and should any masters object to the payment of these dues, the quarantine authorities would not *visé* their bills of health.

Delivery of Ships' Manifests in French Ports:—Shipmasters trading to the port of Dunkirk are in the habit of disregarding the Imperial law, which requires that the Master of every vessel trading to a French port shall have a manifest of cargo ready for delivery at the Custom House on arrival in port, it is notified to Masters and Owners of vessels trading to French ports generally that the strictest attention is necessary to the above regulation, the neglect to comply with which may in future subject them to serious inconvenience.

The Shipping Trade of the Pacific:—The Shields Local Marine Board, in a communication addressed to them by the Lords of the Committee of Privy Council for Trade, have been requested to bring to the notice of Shipowners the following passages which have been extracted from a despatch received from Mr. Foote, her Majesty's Consul at Salvador, relative to the characters and discipline of the Masters and Crews of Hanseatic vessels, as compared with those of British :—" Referring to inclosure No. 2, I beg to call your lordship's attention to the decrease in the entries of British tonnage. In the year 1856 there were entered and cleared from the ports of Salvador, 22 British vessels, whereas, in 1857, but 14 entries appear during the year. It will be observed also, that there is a corresponding increase in the tonnage of Hanseatic vessels. I attribute this, not altogether to the superiority of the class of vessels now sailing out of Hamburg and Bremen, but to the vast difference in the fitting out and manning these vessels. On board the Hamburg vessels, the crews are in general orderly and respectful, and the Masters and Officers have the tact of ingratiating themselves with all whom they come in contact with on the coast, while it seems to be the practice with British shipowners to pay little attention to the class of officers and men appointed to navigate their vessels round Cape Horn, whereas, it is on long voyages that vessels require the very best crews procurable. Hence the falling off in our shipping trade on this coast, and the probability of Hanseatic vessels monopolising the entire carrying trade of the Pacific.

REWARDS AND TESTIMONIALS.

The Board of Trade have awarded a Telescope to **Henry Gage**, master of the American schooner *Zephyr*, for rescuing the crew of the British brig, *Halifax*, from that vessel when in a sinking condition on the 12th March last.

Capt. **John A. Simpson**, of the Ship " Zuleika," of Leith, has received a very handsome present from all his passengers, accompanied by the following address :—

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" Melbourne, 15th *May* 1858.

" Capt. J. A. Simpson, ship *Zuleika*, from Liverpool.

" Dear Sir.—We, the undersigned passengers by the *Zuleika*, from Liverpool, having arrived at Melbourne, beg to return you and your officers our sincere thanks for your and their extreme kindness, attention and urbanity, to us during a passage of eighty-three days from England to Australia; and we also beg that you will accept a well-deserved compliment upon your quiet energy and assiduous attention, as well as professional skill, with which you have discharged all your very highly responsible duties. Also, allow us to say, that you are assuredly in your proper place when commanding a large emigrant vessel. As a small token of our regard and esteem, we beg your acceptance of the accompanying Ring, which, we hope, you will ever regard as a remembrance of your sincere well-wishers."

[Signed by all the Passengers, in cabin, second cabin, and steerage].

CERTIFICATES SUSPENDED.

On the 28th June, an investigation was held at the Board-room of the Dublin Mercantile Marine Board, before F. T. Porter, Esq., Stipendiary Magistrate, assisted by Captain Harris, Nautical Assessor, into the circumstances attending the loss of the brig *Amazon*, of Liverpool, on the Arklow Bank, on the 4th June. The Court, after weighing the circumstances of the case, being of opinion that the brig *Amazon* was lost by a grave error in judgment on the part of James Steele, the master, first in miscalculating his distance from the land, and, secondly, in neglecting to use the lead, which would at once have pointed out his approach to danger;—The Board of Trade have been pleased to direct, that the Certificate of Service, No. 46,570, of James Steele, shall be Suspended for Six Months.

On the 28th June an investigation under the Merchant Shipping Act was held at the Police Court, Greenwich, before H. S. Selfe, Esq., Stipendiary Magistrate, assisted by Captain W. H. Walker, H.C.S., Nautical Assessor, into the circumstances attending the loss of the *Ava* (s.s.,) belonging to the P. and O. Steam Navigation Co., on the 16th February last, on the coast of Ceylon. The Court having duly considered the evidence, was of opinion that proper precautions had not been taken for the safety of the said vessel, and that the loss of the said ship was caused by the default of Cooper Kirton, the master thereof. The Board of Trade have consequently directed, that the Certificate of Competency, No. 7,160, belonging to the said Cooper Kirton, shall be Suspended for Six Months.

Alexander Murray, chief-mate of the *Vesta*, was charged at the Police Court, Liverpool, on the 12th inst., by Mr. Superintendent Murphy, of the Sailors' Home, with having deserted the said ship after receiving £5 advance in cash, and was committed to prison for five weeks. The above having been represented to the Board of Trade, their lordships have directed that his Certificate of Service, No. 64,542, shall be Suspended.

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CONDENSED LIST OF
CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.
Notice to Mariners, from June 25th to July 25th, 1858.

Gulf of Mexico—United States—Light at Pensacola Harbour, Florida:—On and after November 1st, 1858, a Light will be exhibited from a Lighthouse now in course of erection at the entrance of Pensacola Bay or harbour, Florida, when the Light at present shown from the old tower will be discontinued, and the tower taken down as soon after as possible.

It will be a White Revolving Light, showing a Bright Flash every minute. Elevation, 210 feet above the level of the sea, and visible in ordinary weather from the deck of a vessel at a distance of 21 miles.

The new Light-tower is 160 feet in height, of the natural colour of the brick of which it is built; the lantern is painted Red. It stands at about one-third of a mile to the westward of the old structure, and its approximate position is in lat. 30° 19′ N.; long. 87° 17′ 24″ W. of Greenwich.

Gulf of Mexico—United States—Light on Sand Island, Mobile Bay, Alabama:—On and after November 1st 1858, a Light will be exhibited from the Lighthouse now being erected near the site of the present one on Sand Island, western side of the entrance to Mobile Bay, Alabama, when the Light in the old building will be discontinued, and the latter removed.

The new Light will be a Fixed White Light. Elevation, 152 feet above the sea, and visible in ordinary weather from a ship distant 19 miles.

The new Light-tower is 150 feet high, built of brick, surmounted by a granite cornice, brick parapet wall, and brass lantern unpainted. It is of the natural colour of the brick, and it stands in about lat. 30° 11′ 18″ N.; long. 88° 1′ 58″ W. of Greenwich by the U. S. Coast Survey.

The Beacon Range Lights on Sand Island will be placed in their proper positions for preserving the ranges.

Gulf of Mexico—United States—Alteration of Mobile Point Light:—On November 1st 1858, the *present* Revolving Light on Mobile Point, the east point of the entrance to Mobile Bay, will be *changed* to a Fixed White Harbour Light.

Gulf of Mexico—A Flag, as a Day Mark on Two of the Lighthouses on Florida Reefs:—With the view to assist mariners navigating the Florida Strait to determine whether they are on the Bahama or Florida Reefs side, orders have been issued to the keepers of Carysfort Reef, Dry Bank (off Sombrero Cay), and Sand

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Cay Lighthouses, to display an American Flag above the lantern at each of those Lighthouses by day, on and after the 1st of July 1858.

China Sea—Philippine Islands—Light at Port Zebu:—A Harbour Light has been established at Point Dapdap (?) at the N.E. entrance of Port Zebu, on the eastern coast of Zebu, one of the Filipinas or Philippine Islands, in the China Sea.

It is a Fixed White Light. Elevation, 50 English feet above the level of the sea, and visible in clear weather at a distance of 4 miles.

Its position is in about lat. 10° 24½′ N., long. 124° 3′ E. of Greenwich by the Admiralty charts,—or in long. 123° 49′ E., according to the Spanish Official Notice.

China Sea — Philippine Islands — Light at Port Romblon:—A Fixed White Light is exhibited from a Lighthouse erected on Point Sabang, at the northern extremity of the entrance to Port Romblon, on the north-east coast of Romblon Island, Filipinas.

The Light-tower is of stone, and stands in about lat. 12° 36¾′ N., long. 122° 18′ E. of Greenwich.

The extremities of the Reefs within the Port of Romblon, are marked by four Beacons, from which lantern Lights are shown by night.

Indian Ocean—Ceylon—Caution respecting Trincomalee Light:—The usual Notice of the Fixed Light at the Flagstaff, on the north side of the entrance of Trincomalee harbour, on the north-east coast of Ceylon, says it is visible from N. 15° W. round easterly to S. 55° E. These bearings if followed would lead into danger. The mariner, therefore, is cautioned when approaching from the northward, not to steer for the Lights on a bearing to the eastward of S. ¼ E., and when closing from the southward not to bring the Lights to the northward of N.W. by W. ½ W. *magnetic.*

Mediterranean — Coast of Italy — Fixed Light at Reggio:—A Light has been established at Reggio, in Calabria, on the south coast of Italy.

It is a Fixed White Light, placed at an elevation of 75 English feet above the level of the sea, visible in clear weather at a distance of about 5 miles.

It is shown from the small steeple of the church of Santa Maria de Portosalvo, in lat. 38° 6′ 44″ N., and long. 15° 38′ 43″ E. of Greenwich.

Mediterranean—Coast of Italy—Alteration of Light at Molfetta:—The Fixed Light at the western extremity of the detached mole at Molfetta, in Bari, on the western shore of the Adriatic, has been *altered* to a Fixed Light varied by a Flash every three minutes.

Mediterranean — Caution to Mariners — No Lights where such have been reported:—The Lights said to have

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been exhibited at Cape Rizzuto, and at Port Cotrone in Calabria, also at Andrea Island, off Gallipoli in Otranto, on the south-east coast of Italy, do not exist.

Mediterranean—Sardinia—Revolving Light on Cavoli Islet:—On and after the 18th of July 1858 a Light will be exhibited from the Lighthouse recently erected on Cavoli Islet, off Cape Carbonara, the eastern point of the Gulf of Cagliari, south coast of Sardinia,

It will be a Revolving Light, eclipsed every half minute. Elevation, 242 English feet above the level of the sea, visible in clear weather from the deck of a vessel at a distance of about 25 miles.

The Lighthouse stands in lat. 39° 5′ 18″ N., long. 9° 32′ 35″ E. of Greenwich (or by the Admiralty Charts, in lat. 39° 4′ N. long. 9° 31′ 45″ E.)

Australia—S. Coast—Revolving Light on Cape Borda:—On or about the 1st of May 1858, a Light would be exhibited from the Lighthouse recently erected on Cape Borda, the N.W. point of Kangaroo Island, off the entrance to St. Vincent Gulf, South Australia.

It is a Revolving Light, showing alternately Red and White, with intervals of half a minute between each exhibition. Elevation, about 510 feet above the sea at high water, and visible in clear weather from the deck of a vessel at a distance of 30 miles.

The Lighthouse stands in about lat. 35° 45½′ S.; and long. 136° 34½′ E. of Greenwich.

Mediterranean—Coast of France—Fixed Light at the Grau D'Aigues Mortes:—On and after July 15th, 1858, a harbour Light will be exhibited from the north-west Mole-head of the Grau d'Aigues Mortes, in the department of the Bouches du Rhone, Gulf of Lions.

It will be a Fixed Red Light, visible 8 miles, and it is placed at 295 yards to the S.W. of the present Lighthouse, or Phare d'Aigues Mortes.

English Channel—Jersey—Lights at St. Helier:—The following Lights are exhibited all night for the guidance of vessels bound into the harbour of St. Helier, Jersey:—

A Fixed White Light from the Lighthouse on Victoria or New South Pier-head, placed at an elevation of 31 feet above the level of the sea at high water, and visible in ordinary weather from a distance of about 6 miles.

A Fixed Red Light from a lantern post on Albert Pier-head, elevated 15 feet above high water, and visible in ordinary weather from a distance of about 3 miles.

A Fixed Blue Light on the parapet of the Old North Pier, at 477 yards to the N.E. by E. of the Albert Pier Light, and it should be seen about 3 miles distant in ordinary weather.

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A Fixed Red Light from a lantern post on the Upper Pier Road, 680 yards to the E.N.E. of the Victoria Pier Light, at an elevation of 46 feet above high water, and also visible 3 miles in ordinary weather.

Vessels approaching the harbour, by keeping the Albert Pier *Red* and Old North Pier *Blue Lights* in line, will pass a little to the westward of the Grune St. Michael—and to the eastward, but rather too close to Les Huitriers, or Oyster Rocks.

The best approach from the westward will be the passage between the Oyster Rocks and the Bues, with the Victoria or New South Pier Light in line with the Upper Pier Road *Red* Light, although this leads too close to the Grune au Dart and the Grande Vaudin.

Bearings Magnetic. Var. 21¾° *West in* 1858.

North Pacific Ocean—California—Bell Boat off San Francisco Bay:—A Bell Boat has been placed just outside the bar of San Francisco Bay or Harbour, California.

The Boat is 30 feet long, and painted Red. The Bell is elevated 15 feet, and the Day Mark of 3½ by 4 feet, is 8 feet above the water. The Bell is rung by the motion of the sea, and should be heard, under ordinary circumstances, from 1 to 3 miles distant.

The Bell Boat lies in 15 fathoms at low water, in line or range with Fort Point and Alcatraz Island Lighthouses, with the following bearings and distances:—

South Farallon Island Lighthouse	S.W. by W.½W.	17 miles
Point Reyes	N.W. by W.¾W.	22¾ „
Duxbury Reef	N.N.W.¾W.	8½ „
Point Bonita Lighthouse	N.E.¼N.	7¼ „
Fort Point Lighthouse	N.E.¾E.	9¼ „
Point Lobos Telegraph Station	N.E. by E.½E.	7½ „
Point Pedro	S.E.¼E.	11¾ „

From the Bell-Boat the course to enter the Bay is N.E.½E.

Mariners are cautioned not to run into or damage this aid to navigation. The Bar-Buoy, on the same range, *is removed;* and the Fog-gun-signal at Point Bonita *is discontinued.*

Bearings magnetic: Variation 15¼° E. in 1858.

West Indies—New Grenada and Venezuela—Light at Rio de la Hacha:—A Harbour Light has been established at the city of La Hacha, on the river of that name, in the province of Santa Martha, coast of New Grenada, West Indies.

It is a Fixed Light, placed at an elevation of 69 English feet above the level of the sea at high water, and visible in clear weather from a distance of about 6 miles.

It is shown from the tower of the church of La Hacha, in lat. 11° 33′ 47″ N.; long. 72° 59′ 16″ W. of Greenwich.

Caution.—The *small Fixed Light* at the pier of La Guayra, the port of Caracas, on the coast of Venezuela, is no longer exhibited.

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England—E. Coast—Fixed Lights at Whitby:—The two Light-towers on High Whitby being now nearly completed, the Lights will be exhibited therefrom on the 1st of October 1858.

The Towers are 775 feet apart in a N. 19° W., and S. 19° E. direction, and the Lights will be Fixed Bright; the centre of each will burn at an elevation of 247 feet above the mean sea level, and will thus, being of equal altitude, peculiarly indicate the locality of High Whitby.

The Lights will also be useful in clearing Whitby Scar Rock, which lies about two miles from the North Lighthouse; for this purpose the southernmost Light should be kept open of the northernmost one: and masters of vessels are strictly cautioned that these Lights *in line* lead on the Rock.

The range of the Lights will be from N. 28° W. round seaward, to S. 17° E.; and they will be visible at a distance of about 23 miles, and will show over the north cheek of Robin Hood's Bay.

Mediterranean—Corfu—Removal of Buoys from the Shoal off Cape Bianca:—The Ionian Government have taken up the Black and Red Buoys, on the Shoal off Cape Bianca, S. coast of Corfu, and replaced them with a very small Black Buoy on the outer edge of the Shoal.

England—Sea Reach—Entrance of River Thames:—With reference to a Notice (see *Mer. Mar. Mag.* Jan. 1858, p. 28), that the Yantlet Shoal had extended itself to the northward, thereby contracting the channel in Sea Reach:—The Beacon then placed upon Canvey Island has been enlarged, and its character altered, a Diamond having been placed above the Triangle, and a Square below it, and its height increased 15 feet.

The bearing of the Beacon, just touching the south side of the Chapman Lighthouse, viz.: N.W. by W. ½ W., is still the same, and leads into the best water, viz.: 23 feet at low water spring tides.

Masters of vessel and Pilots are hereby cautioned, that on some patches of the Yantlet Middle, there is not more water than 17 feet at low water spring tides.

Scotland—Shetland Isles—Bressay Sound Lighthouse.—On the 30th day of August 1858, a Light will be exhibited from Bressay Sound Lighthouse, Shetland Isles.

Bressay Sound Lighthouse is on the eastern side of the south entrance of the Sound of Bressay, leading to Lerwick, and is situated on that projecting point of the Island of Bressay, which is called Kirkabisterness.

The Light will be a Revolving Red and White Light, showing Flashes at intervals of one minute, which Flashes will be Red and White alternately. The tower, 40 feet in height, will, together with the keeper's houses, be painted White.

The Light is elevated about 105 feet above high water of spring tides, visible in clear weather about 15 miles.

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Australia—E. Coast—Light on the Inner South Head, Entrance of Port Jackson:—and also on Fort Denison, *formerly* Pinchgut Island.—On the 1st day of June 1858, a Fixed Bright White Light would be exhibited from the Lighthouse recently erected on the Inner South Head, at the entrance of Port Jackson.

The Lighthouse stands on the edge of the cliff forming the Inner South Head, at an elevation of 60 feet above the sea level. It consists of a Tower 30 feet in height, which is painted in vertical stripes of red and white.

The Light will be visible within the arc of its range, from an 18 feet elevation, at a distance of 15 miles.

On and after the same date, a Fixed Red Harbour Light would be exhibited from the tower on Fort Denison, formerly known as Pinchgut Island.

NEW BOOKS.

PILOTAGE RATES AND REGULATIONS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM, with the Charges for Towage; also the various expenses levied by authority of the Caledonian, Crinan, Forth and Clyde, and Berkeley and Gloucester Canal Companies: to which is prefixed the Law relative to Pilotage Authorities and Pilots. By JAMES F. IMRAY, F.R.G.S. London: James Imray & Son. Price 6s.

[Shipmasters will find this a very useful book, as the Rates and Regulations have been collected from the most trustworthy sources, and the materials are judiciously and carefully arranged.]

THE SEA OFFICER'S MANUAL, being a Compendium of the Duties of a Commander; First, Second, Third, and Fourth Officer; Officer of the Watch; and Midshipman; in the Mercantile Navy. By Captain A. PARISH, East India Merchant Service, and late of the H.E.I.C.S. London: Smith, Elder & Co., 65, Cornhill. Second Edition. Price 5s.

BOOKS PUBLISHED BY THE ADMIRALTY :—	s.	d.
NORTH COAST OF EUROPE LIGHTS. Corrected by Commander DUNSTERVILLE, R.N., to July 1858 ..	1	0
UNITED STATES LIGHTS. Corrected by Commander DUNSTERVILLE, to July 1858	1	6

BOOKS PUBLISHED BY THE METEOROLOGICAL DEPARTMENT OF THE BOARD OF TRADE:—

BAROMETER AND WEATHER GUIDE. Price 6d.

BAROMETER MANUAL. Price 6d.

[We strongly recommend these two excellent and cheap works to the careful perusal of all Navigators.]

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CHARTS, &c., NEW OR CORRECTED.

Published by the Hydrographic Office, Admiralty, in July 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
England, S. Coast.—Portland and Weymouth Roads. Corrected ..	3	0
England, S.W. Coast.—Sheet 1. Trevose Head to Dodman Point. Captain G. Williams, R.N. 1858	3	0
Orkneys.—Long Hope Sound and Widewall Bay. Late Commander G. Thomas, R.N.	3	0
Orkneys.—Hoy Sound. Late Commander G. Thomas, R.N.	1	6
Orkneys.—Deer Sound and Inganess Bay. Late Command. G. Thomas, R.N.	1	6
Orkneys.—Kirkwall, Approaches to. Late Commander, G. Thomas, R.N.	3	0
Orkneys.—Pierowall Road. Late Commander G. Thomas, R.N. ..	1	6
Orkneys.—North Ronaldsha Firth. Captain Becher, R.N.	1	6
North Sea.—Ems River	2	6
France.—Sheet 7. Boulogne to Dunkerque. French Surveys	2	0
France.—Sheet 6. Boulogne to Dieppe. French Surveys	2	0
France.—Sheet 5. Dieppe to Trouvelle. French Surveys	2	0
France.—Sheet 4. Barfleur to D'Antifer. French Surveys	2	0
France.—Cherbourg. French Surveys	3	6
Mediterranean.—Cani Rocks	1	0
W. Indies.—Sheet 4. St. Domingo to Dominica Island		
S. America.—Paraguay River. Oliva to Rio Paraguaymi. Commander Page, U.S.N. 1855	2	6
S. America.—Paraguay River. Rio Paraguaymi to Concepcion. Commander Page, U.S.N. 1855	2	6
S. America.—Paraguay River. Concepcion to lat 21° 40′ S. Commander Page, U.S.N. 1855	2	6
Red Sea.—Jiddah. Captain T. Elwon, I.N.	2	6
China.—Banca Strait. Dutch Charts and the late Captain Bate, R.N. Corrected to 1855	3	0
New Zealand.—Sheet 12. Fogo Strait to Awarua River. Captain Stokes, R.N.	3	0
New Zealand.—Sheet 13. Awarua River to Abut Head. Captain Stokes, R.N.	3	0
New Zealand. Sheet 14. Abut Head to Cape Foulwind. Captain Stokes, R.N.	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

SEPTEMBER 1858.

THE VOYAGE TO AUSTRALIA & NEW ZEALAND, &c.

(Continued from Vol. IV—page 302).

Logs of vessels sailing in April, May, and June :—

49.—To SHANGHAI.

1857—19th April—May—June, &c.

Outside the C. Verd Is.—and crossed the Equator in 26°W.

8th May	From 10°N. to Equator ...	4¾	days
16th May	„ Equator to 10°S.	3¼	„
		8	days

Furthest *westing* N. of Equator 26¼°W. in lat. 16¼°N.
„ „ S. 37¾°W. „ 20½°S.
Crossed the mer. of Greenwich in 37°S.
Furthest *southing* 41° 32'S. in 27½°E.

From the Eddystone to the Equator		23¾	days
„	Equator to mer. of Greenwich	22	„
„	Mer. of Greenwich to 20°E.	5¼	„
„	20°E. to 40°E.	4½	„

Making a total of 55½ days.

50.—To PORT PHILLIP.

1857—23rd April—May—June—July.

Inside the C. Verd Is.—and crossed the Equator in 24°W.

10th May	From 10°N. to Equator	11½	days
25th May	„ Equator to 10°S.	4	„
		15½	days

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Furthest *westing* N. of Equator 20° 37′W. in lat. 7½°N.
„ „ S. „ 30° 3′W „ 12½°S
Crossed the mer. of Greenwich in 38½°S.
Furthest *southing* 44° 43′S. in 31° 20′E.—generally between the parallels of 42° and 44°S. from 28°E. to 126°E.

From the Eddystone to Equator	28	days
„	Equator to mer. of Greenwich	22	„
„	Mer. of Greenwich to 20°E.	5	„
„	20°E. to 40°E.	8½	„
„	40°E. to Port Phillip	25	„

Making a total of 88½ days.

51.—To Sydney.

1857—24th April—May—June—July.
Outside the C. Verd Is.—and crossed the Equator in 26½°W.
10th May—From 10°N. to Equator.... 5 days
20th „ — „ Equator to 10°S .... 5 „
10 days

Furthest *westing* N. of Equator 26° 13′W. in lat. 15½°N.
„ S. „ 38° 10′W. „ 21°S.
Crossed the mer. of Greenwich in 37½°S.
Furthest *southing* 42°S. in 41½°E. and in 83°E.:—between the 41st and 42nd parallels from 18°E. to 126½°E.

From the Eddystone to Equator	21	days
„	Equator to mer. of Greenwich	20	„
„	Mer. of Greenwich to 20°E.....	5½	„
„	20°E. to 40°E.	4½	„
„	40°E. to mer. of C. Otway.....	24½	„
„	Mer. of C. Otway to Sydney.....	7½	„

Making a total of 83 days.

52.—To Shanghai.

1856—7th May—June—July, &c.
Inside the C. Verd Is.—and crossed the Equator in 24°W.
23rd May—From 10°N. to Equator.. 8 days
4th June „ Equator to 10°S. .. 4 „
12 days

Furthest *westing* N. of Equator 22°W. in lat. 11¼°N.
„ S. „ 34¾°W. „ 19½°S.
Crossed the mer. of Greenwich in 40°S.
Furthest *southing* 41½°S. in 6½°E.

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From the Eddystone to Equator..... 24 days
„ Equator to mer. of Greenwich ..... 31½ „
„ Mer. of Greenwich to 20°E. ..... 7½ „
„ 20°E. to 40°E..... ..... 5¾ „
Making a total of 68¾ days.

53.—To HOBARTON—VAN DIEMAN'S LAND.
1856—22nd May—June—July—August.
Outside the C. Verd Is.—and crossed the Equator in 26¼°W.
12th June—From 10°N. to Equator .. 7½ days
22nd „ Equator to 10°S... 3 „
10½ days

Furthest *westing* N. of Equator 26½°W. in lat. 14½°N.
„ S. „ 36°W. „ 24°S.
Crossed the mer. of Greenwich in 37°S.
Furthest *southing* 46°S. in 132°E.

From the Eddystone to Equator.. ..... 28 days
„ Equator to mer. of Greenwich..... 22¾ „
„ Mer. of Greenwich to 20°E. ..... 4¾ „
„ 20°E. to 40°E. ..... 4½ „
„ 40°E. to Hobarton ..... 24 „
Making a total of 84 days.

54.—To SYDNEY.
1857—24th May—June—July—August.
Outside the C. Verd Is.—and crossed the Equator 32¼°W.
19th June—From 10°N. to Equator.. 8 days
6th July „ Equator to 10°S. .. 9 „
17 days

Furthest *westing* N. of Equator 30°W. in lat. 3½°N.
„ S. „ 36¼°W. „ 12¾°S.
Crossed the mer. of Greenwich 41°S.
Furthest *southing* 43½°S. in 64¼°E.—and thence to 135°E. between the parallels of 41° and 42°S.

From the Eddystone to Equator ..... 34 days
„ Equator to mer. of Greenwich ..... 30 „
„ Mer. of Greenwich to 20°E..... 5½ „
„ 20°E. to 40°E. ..... 5½ „
„ 40°E. to mer. of C. Otway ..... 27½ „
„ Mer. of C. Otway to Sydney ..... 3½ „
Making a total of 106 days.

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55.—To Geelong.

1857—31st May—June—July—August.
Outside the C. Verd Is.—and crossed the Equator in 22°W.
25th June—From 10°N. to Equator.. 13½ days
13th July „ Equator to 10°S... 4 „

17½ days

Furthest *westing* N. of Equator 25¾°W. in lat. 17°N.
„ S. „ 27¼°W. „ 16¼°S.
Crossed the mer. of Greenwich in 38½°S.
Furthest *southing* 43° 54′S. in 128°E., but generally between the 39th and 40th southern parallels.

From the Eddystone to the Equator	38½	days
„ Equator to mer. of Greenwich	28	„
„ Mer. of Greenwich to 20°E.	8½	„
„ 20°E. to 40°E.	5½	„
„ 40°E. to Geelong.....	33½	„

Making a total of 114 days.

56.—To Shanghai.

1854—24th June—July—Aug. &c.
Inside the C. Verd Is.—and crossed the Equator in 23°W.
12th July—From 10°N. to Equator .. 7½ days
23rd „ „ Equator to 10°S. .. 4 „

11½ days

Furthest *westing* N. of Equator 22¾°W. in lat. 1¼°N.
„ „ S. „ 34°W. „ 17°S.
Crossed the mer. of Greenwich in 36°S.
Furthest *southing* 41¼°S. in 30°E.

From the Eddystone to Equator	25½	days
„ Equator to mer. of Greenwich.....	27½	„
„ Mer. of Greenwich to 20°E.	5	„
„ 20°E. to 40°E.	6½	„

Making a total of 64½ days.

57.—To Hobarton—Van Dieman's Land.

1855—5th June—July—Aug.
Outside the C. Verd Is.—and crossed the Equator in 24½°W.
23rd June—From 10°N. to Equator .. 9½ days
6th July „ Equator to 10°S..... 3½ „

13 days

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Furthest *westing* N. of Equator 26¼°W. in lat. 17¾°N.
„ „ S. „ 33°W. „ 13¼°S.
Crossed the mer. of Greenwich in 37¼°S
Furthest *southing* 44° 50′S. in 59°E.

From the Eddystone to Equator.....	27	days
„ Equator to mer. of Greenwich	21½	„
„ Mer. of Greenwich to 20°E.	5	„
„ 20°E. to 40°E.	4½	„
„ 40°E. to Hobarton	23½	„

Making a total of 81½ days.

58.—To Auckland—New Zealand.

1855.—6th June—July—Aug.—Sept.
Outside the C. Verd Is.—and crossed the Equator in 23°W.

23rd June—From 10°N. to Equator ..	14	days	
11th July „ Equator to 10°S. ..	4	„	
	18	days	

Furthest *westing* N. of Equator 27¾°W. in lat. 6½°N.
„ S. „ 27¼°W. „ 17¾°S.
Crossed the mer. of Greenwich 39°S.
Furthest *southing* 52° 58′S. in 70° 35′E.

From the Eddystone to Equator.....	31½	days
„ Equator to mer. of Greenwich	22½	„
„ Mer. of Greenwich to 20°E.	6½	„
„ 20°E. to 40°E.	4	„
„ 40°E. to mer. of C. Otway.....	19½	„
„ Mer. of C. Otway to Auckland	16	„

Making a total of 100 days.

59.—To Hong Kong.

1855—7th June—July—Aug. &c.
Inside the C. Verd Is.—and crossed the Equator in 22°W.

24th June—From 10°N. to Equator ..	10	days	
7th July „ Equator to 10°S.....	3½	„	
	13½	days	

Furthest *westing* N. of Equator 21½°W. in lat. 10°N.
„ „ S. „ 32½°W. „ 16½°S.
Crossed the mer. of Greenwich in 36½°S.
Furthest *southing* 41¼°S. in 58°E.

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From the Eddystone to the Equator ..... 26½ days
„ Equator to mer. of Greenwich .... 25 „
„ Mer. of Greenwich to 20°E. ..... 5½ „
„ 20°E. to 40°E. ..... 4½ „
Making a total of 61½ days.

60.—To Shanghai.

1855—13th June—July—Aug. &c.
Outside the C. Verd Is.—and crossed the Equator in 25°W.
1st July—From 10°N. to Equator .. 7 days
12th „ „ Equator to 10°S. .. 4 „
11 days

Furthest *westing* N. of Equator 26½°W. in lat. 19°N.
„ S. „ 35¼°W. „ 15°S.
Crossed the mer. of Greenwich in 40½°S.
Furthest *southing* 41¼°S. in 12¼°E.

From the Eddystone to Equator..... 25½ days
„ Equator to mer. of Greenwich .... 22 „
„ Mer. of Greenwich to 20°E. ..... 6 „
„ 20° to 40°E. ..... 6½ „
Making a total of 60 days.

61.—To Geelong.

1857—4th June—July—Aug.—Sept.
Outside the C. Verd Is.—and crossed the Equator in 28¾°W.
25th June—From 10°N. to Equator .. 4½ days
3rd July „ Equator to 10°S. .... 3½ „
8 days

Furthest *westing* N. of Equator 27°W. in lat. 3°N.
„ „ S. 36½°W. „ 24°S.
Crossed the mer. of Greenwich in 41°S.
Furthest *southing* 41¾°S. in 6½°E.—generally between the parallels of 39½° and 40½°S.

From the Eddystone to the Equator ..... 25 days
„ Equator to mer. of Greenwich .... 21½ „
„ Mer. of Greenwich to 20°E. ..... 4½ „
„ 20°E. to 40°E. ..... 5 „
„ 40°E. to Geelong ..... 26 „
Making a total of 82 days.

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Logs of vessels sailing in July, August, and September :—

LXX.—To Adelaide.

1857—8th July—August—Sept.—Oct.
Outside the C. Verd Is.—and crossed the Equator 24¼°W.
31st July—From 10°N. to Equator.... 8½ days
12th Aug.— „ Equator to 10°S. .... 3½ „

12 days

Furthest *westing* N. of Equator 27½°W. in lat. 12°N.
„ „ S. 37°W. „ 25½°S.
Crossed the mer. of Greenwich in 41½°S.
Furthest *southing* 42° 48′S. in 34° 20′E.—generally between the parallels of 41° and 42°S.

From the Eddystone to Equator	30½	days
„ Equator to mer. of Greenwich..	25½	„
„ Mer. of Greenwich to 20°E.....	5	„
„ 20°E. to 40°E.....	6	„
„ 40°E. to Adelaide	27	„

Making a total of 94 days.

LXXI.—To Melbourne.

1857—28th July—Aug.—Sept.—Oct.—Nov.
Outside the C. Verd Is.—and crossed the Equator in 20½°W.
23rd Aug.—From 10°N. to Equator.... 10 days
5th Sept.— „ Equator to 10°S .... 3½ „

13½ days

Furthest *westing* N. of Equator 28°W. in lat. 14¼°N.
„ „ S. „ 33°W. „ 20¼°S.
Crossed the mer. of Greenwich 42°S.
Furthest *southing* 45°S. in 111°E.

From the Eddystone to Equator	36	days
„ Equator to mer. of Greenwich ..	26½	„
„ Mer. of Greenwich to 20°E.	4½	„
„ 20°E. to 40°E.	4½	„
„ 40°E. to Melbourne	25½	„

Making a total of 97 days.

LXXII.—To Port Phillip.

1849—17th Aug.—Sept.—Oct.—Nov.—Dec.
Outside the C. Verd Is.—and crossed the Equator in 21°W.
4th Sept.—From 10°N. to Equator .. 8 days
17th „ „ Equator to 10°S. .. 4¾ „

12¾ days

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Furthest *westing* N. of Equator 26°W. in lat. 17°N.
„ „ S. „ 31½°W. „ 24°S.
Crossed the mer. of Greenwich in 37½°S.
Furthest *southing* 43° 9'S. in 85½°E.—but *north* of the 39° parallel as far as 55½°E.—and thence to C. Otway generally between the 39th and 40th parallels.

From the Eddystone to Equator.....	26½	days
„ Equator to mer. of Greenwich	33½	„
„ Mer. of Greenwich to 20°E.	6½	„
„ 20°E. to 40°E.	11	„
„ 40°E. to Port Phillip	30½	„

Making a total of 108 days.

LXXIII.—To Melbourne. *(Departure from Rona, coast of Scotland, thence by the W. of Ireland).*
1853—25th Aug.—Sept.—Oct.—Nov.—Dec.
Outside the C. Verd Is.—and crossed the Equator in 25½°W.
26th Sept.—From 10°N. to Equator .. 14 days
15th Oct. „ Equator to 10°S. .... 5½ „
19½ days

Furthest *westing* N. of Equator 25¾°W. in lat. 17¾°N.
„ „ S. „ 30¾°W. „ 14°S.
Crossed the mer. of Greenwich in 39°S.
Furthest *southing* 50½°S. in 79¾°E.

From Rona to Equator	46	days
„ Equator to mer. of Greenwich	27½	„
„ Mer. of Greenwich to 20°E.	5½	„
„ 20°E. to 40°E.	5	„
„ 40°E. to Melbourne	35½	„

Making a total of 119½ days.

LXXIV.—To Hobarton—Van Dieman's Land.
1857—15th Aug.—Sept.—Oct.—Nov.
Outside the C. Verd Is.—and crossed the Equator in 22°W.
5th Sept.—From 10°N. to Equator .. 11½ days
21st Sept.— „ Equator to 10°S. .. 4½ „
16 days

Furthest *westing* N. of Equator 27°W. in lat. 13¼°N.
„ „ S. „ 33¼°W. „ 20½°S.
Crossed the mer. of Greenwich in 42°S.
Furthest *southing*—generally between the 41st and 42nd southern parallels, from 11°E. to 114°E.

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From the Eddystone to the Equator.. . 32½ days
„ Equator to mer. of Greenwich 28½ „
„ Mer. of Greenwich to 28°E. .. 6 „
„ 20°E. to 40°E. .... 5 „
„ 40°E. to Hobarton ..... 30 „
Making a total of 102 days.

LXXV.—To SYDNEY.

1857—28th Aug.—Sept.—Oct.—Nov.
Through the C. Verd Is.—and crossed the Equator in 26°W.
23rd Sept.—From 10°N. to Equator.... 9 days
5th Oct.— „ Equator to 10°S. .... 3½ „

12½ days

Furthest *westing* N. of Equator 24½°W. in lat. 17½°N.
„ „ S. 35°W „ 15½°S.
Crossed mer. of Greenwich in 38¼°S.
Furthest *southing* 47° 42′S. in 79½°E.

From the Eddystone to Equator ..... 34½ days
„ Equator to mer. of Greenwich.. 19 „
„ Mer. of Greenwich to 20°E. . 4½ „
„ 20°E. to 40°E. ..... 8 „
„ 40°E. to mer. of C. Otway.... 22½ „
„ Mer. of C. Otway to Sydney .. 4½ „
Making a total of 93 days.

LXXVI.—To SWAN RIVER.

1853—4th Sept.—Oct.—Nov.—Dec.
Outside the C. Verd Is.—and crossed the Equator in 22°W.
28th Sept.—From 10°N. to Equator .. 9½ days
12th Oct. „ Equator to 10°S. .. 4½ „

14 days

Furthest *westing* N. of Equator 26° 3′W. in lat. 18°N.
„ „ S. „ 30° 15′W. „ 21°S.
Crossed the mer. of Greenwich in 36°S.
Furthest *southing* 40° 27′S. in 24° 30′E.—but generally between the parallels of 38° and 39°S.

From the Eddystone to Equator..... 33½ days
„ Equator to mer. of Greenwich..... 21½ „
„ Mer. of Greenwich to 20°E. ..... 9 „
„ 20°E. to 40°E. ..... 8 „
„ 40°E. to Swan River ..... 23½ „
Making a total of 95½ days.

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LXXVII.—To Adelaide.

1856—3rd Sept.—Oct.—Nov.—Dec.
Outside the C. Verd Is.—and crossed the Equator in 24½°W.
30th Sept.—From 10°N. to Equator.... 12½ days
17th Oct.— „ Equator to 10°S .... 3¾ „

16¼ days

Furthest *westing* N. of Equator 28° 15′W. in lat. 15°N.
„ „ S. 28° 21′W „ 8°S.
Crossed the mer. of Greenwich in 43°S.
Furthest *southing* 48° 52′S. in 33° 35′E.

From the Eddystone to Equator ..... 39¼ days
„ Equator to mer. of Greenwich.. 24 „
„ Mer. of Greenwich to 20°E. .. 6¾ „
„ 20°E. to 40°E. ..... 4 „
„ 40°E. to Adelaide ..... 25¼ „
Making a total of 99¼ days.

LXXVIII.—To Calcutta.

1856—4th Sept.—Oct.—Nov. &c.
Outside the C. Verd Is.—and crossed the Equator in 25½°W.
30th Sept.—From 10°N. to the Equator.. 13 days
17th Oct.— „ Equator to 10°S..... 4 „

17 days

Furthest *westing* N. of Equator 27°26′W. in lat. 12°5′N.
„ „ S. „ 29°9′W. „ 6°22′S.
Crossed the mer. of Greenwich in 39°40′S.
Furthest *southing* 40°51′S. in 18°14′E.

From the Eddystone to Equator ..... 39 days
„ Equator to mer. of Greenwich 27¾ „
„ Mer. of Greenwich to 20°E... 5½ „
„ 20°E. to 40°E. ..... 5½ „
Making a total of 77¾ days.

LXXIX.—To Port Lyttleton, New Zealand.

1856—13th Sept.—Oct.—Nov.—Dec.
Outside the C. Verd Is.—and crossed the Equator in 24¼°W.
2nd Oct.—From 10°N. to Equator .. 10 days
15th „ „ Equator to 10°S. .... 3½ „

13½ days

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Furthest *westing* N. of Equator 27½°W. in lat. 8¼°N.
„ „ S. „ 28°W. „ 10°S.
Crossed the mer. of Greenwich in 41½°S.
Furthest *southing* 50° 47′S. in 90¼°E.

From the Eddystone to Equator	29½	days
„ Equator to mer. of Greenwich	25	„
„ Mer. of Greenwich to 20°E.	6½	„
„ 20°E. to mer. of C. Otway	26	„
„ Mer. of C. Otway to Port Lyttleton	14½	„

Making a total of 101½ days.

(To be continued.)

COAST CLIMATE OF NEW ZEALAND.

The coast climate of New Zealand, from Stewart's Island to the North Cape, may be described as the most changeable in the world, and at the same time the most strictly temperate. For between these two points, including a space of 800 miles in latitude, calms, rains, and winds, clouds and sunshine, and heat varying between 40 and 70 degrees Fahrenheit's scale are occasionally experienced in twenty-four hours. This singularity of the climate of New Zealand is probably produced by the shape and mountainous character of a great part of the country and the immense sea encircling the islands. Much importance has been attached to the mean annual temperature of countries, and New Zealand, in consequence of conclusions from this source, has been said to possess an Italian climate. But there are marked points of difference between the seasons of New Zealand and Italy. Thus, in Italy there is a sort of summer winter, when cattle must be provided for in-doors as in winter, and during which for several hours of the day all out-door work is interrupted by heat. There is no similar winter in New Zealand, and it is the opinion of persons who have sojourned in different parts of the world, that the Anglo-Saxon race can work and expose themselves to the climate of New Zealand, without injury, during more days in the year, and for more hours in the day, than in any other country. It may be observed, that no single locality in Europe has a temperature during the whole year like New Zealand. The north island of New Zealand, in short, possesses the summer heat of Paris, Brussels, and Amsterdam, with the winter cold of Rome; while Middle Island has a Jersey summer, and a winter in coldness resembling that of Montpellier. The difference between the mean temperature of the coldest and warmest months in the year in New Zealand, is about 20°; at Rome it is 27°, at Montpellier 33°, at Milan 38°, and at Jersey 22°, while New York and Quebec, placed in the same latitudes as Wellington and Otago, experience tropical heats in August and polar colds in January.

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Snow seldom lies on the ground at the level of the sea in the North Island of New Zealand, and not very often in Middle Island. But all round the year the summit of Ruapahu, the highest mountain in the North Island, and the great mountain chains in the Middle Island are covered with snow. Ice is occasionally seen in winter from one extremity of New Zealand to the other, but frosts are comparatively slight to the south of Auckland, although the North Cape is occasionally covered with hoar frost.

More rain falls in New Zealand than in London, but much less than on the west coast of England. Wind is very prevalent. In probably no country in Europe is the atmosphere so frequently agitated by winds as in New Zealand. The mean pressure of the wind at Auckland is nearly a pound on the square foot, and the strongest wind yet registered at Auckland exerted a pressure of 35¼ lbs. on the square foot, equivalent to a velocity of 84½ miles per hour, the speed of a "young hurricane." A gale is indicated by a velocity of 50 miles an hour. The winds in New Zealand increase in force and frequency as we advance southwards from Auckland. Cook and Foveaux Straits are celebrated for stiff breezes and gales.

In Cook Strait, the prevailing, indeed the almost constant winds, are N.W. or S.E.; and approaching either entrance with N.E. or S.W. winds, the former will almost certainly change to S.E., and the latter to N.W.; the changes also from N.W. to S.E., and the contrary are common and frequently very sudden; lightning, or a dark bank of clouds rising, are pretty certain indications that the wind will come from the quarter in which they appear, but it is not an uncommon circumstance for a vessel running through the Strait with a fair wind, on opening out either entrance, to be taken aback with one from the opposite quarter, with little or no warning. Gales from these quarters are also frequent, and blow with great violence; those from S.E. are most frequent during the winter months of May, June, and July; a falling barometer is a certain indication. They come on very suddenly, last often three days, and are generally accompanied by rain and thick weather. N.W. gales are most common in spring and summer, they are exceedingly violent, though generally of short duration, and at their strongest raise a high barometer.

These winds are believed to be almost purely local, and their violence is in a great measure due to the configuration of the shores; they do not extend far beyond the line of Strait and the harbours which indent its shore; in proof of this, the head of Blind Bay on the southern side is remarkably exempt from strong winds, and frequently enjoys fine and calm weather while a gale is blowing in Cook Strait.

Foveaux Strait and the coasts of Stewart Island, are without doubt the most boisterous localities in New Zealand; heavy gales from N.W. to S.W. are the prevailing winds, and seem to blow, without regard to seasons, at all times of the year, occasionally continuing for weeks without intermission. N.W. winds are the most

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frequent in Foveaux Strait, which seldom last less than four or five days, and often bring rain and thick dirty weather; thunder which is not of common occurrence in New Zealand, is said to indicate that the gale will be of unusually long duration; the barometer falls on the approach of this wind, though it often continues to blow hard after the mercury has risen; on these occasions, however, it generally veers to S.W., and the weather clears.

A strong S.E. wind may be looked for about once in six weeks in the summer months, and perhaps twice in that period during June, July, August, and September, and generally occurs about the full or change of the moon; the barometer rises before one of these winds and they often blow with great strength, bringing thick weather with drizzling rain; a heavy bank of clouds rising to the S.E., with rain, and the tops of the hills clothed with a white mist nearly to the horizon, are considered as certain indications.

Before a S.E. gale, also, the groups of islands between Ruapuke and Stewart Island appear much raised by refraction, but on going westward, should Solander island appear distorted from the same cause, the Westerly wind will prevail over the Easterly: a casual N.E. or Easterly wind with fine weather in the eastern entrance of the Strait almost certainly turns to N.W. before reaching the western entrance; the only wind which can be depended on to carry a vessel through is a strong south-easter.

The worst weather is said to occur in Foveaux Strait, in July.

At Nelson, standing at the head of Blind Bay, 14 gales, on an average, occurred annually. All round the coasts of New Zealand a sea breeze occasionally blows in summer. There is also a sort of sirocco, or hot wind, on the eastern coast, which melts the snow on the mountains and raises the thermometer 20 deg. or 30 deg.; it is generally the precurser of rain. That this wind is derived from Australia is almost certain.

As regards general phenomena, it appears that during 11 years Mr. Stephens registered at Nelson 2 solar haloes, 20 lunar haloes, 5 extraordinary tides, and 55 earthquakes. Excepting the last phenomena, the above may be taken as an average for the whole of New Zealand. The earthquake region in New Zealand comprehends a space of about 350 miles, or that portion of the country lying between White Island, (*Whakari*) lat. 37° 30′, and Banks Peninsula, lat. 43° 46′, having Cook Strait for its centre. All the earthquakes registered since the arrival of the settlers have been slight save those of 1848 and 1855. The New Zealand atmosphere on the sea coast is not much disturbed by thunder-storms, but in the neighbourhood of high mountains these phenomena are more frequent. At Nelson, on an average of 11 years, 12 thunder-storms occurred annually, and at New Plymouth seven. Fogs are rare in the northern parts of New Zealand, but they increase in frequency and duration as you advance southwards. Hailstorms occur. The Aurora Australia is occasionally seen from the Middle Island. Shooting stars are not so frequent as in England, and the sky is rarely lit up with meteors of any brilliancy.

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BRITISH COLUMBIA.

The discovery of Gold in British Columbia will give a vast impetus to the growth of our power on the western side of America, and will hasten forward the completion of that line of railway from New Brunswick to the Pacific, which will be of such incalculable importance to the commerce of England. In its geographical position, British Columbia is most favourably situated. The coast, abundantly indented with numerous bays and inlets, is washed by the Pacific, and the fine island of Vancouver stands before the southern portion a vast natural breakwater, protecting the mouth of Fraser River and the high road to the Gold region. Of the climate of this part of the Hudson's Bay Territory, now formed into a British colony, we are at length beginning to learn something of a reliable nature. A gentleman who has resided there for eight years, says, that for the beauty of its scenery, the salubrity of its climate, and its general adaptation to commerce, the territory on the shores of the Pacific cannot be surpassed by any country in the world; the soil, too, is fertile in the highest degree, and possesses great agricultural capabilities. The face of the country presents a succession of mountain ridges, valleys, and plains —the more fertile districts lying, for the most part, between the Cascade Mountains and the ocean. That portion of the country which lies between the Cascade Mountains and the Pacific, is, we are informed, subject to a remarkably equable temperature, the mean being about 54 degrees Fahrenheit. The equable character of the climate is probably occasioned by the circumstance of the prevailing summer winds being from the north, and laden with the cooling influences of the Polar Sea; and that the winter winds coming from the west, the south, and the south-east—except the latter, which comes from the snows of the mountains—tend to prevent that degree of cold which would otherwise prevail. There are about four months of winter, generally beginning in November and lasting till March. Snow seldom lies for more than a week on the ground, and, though there are frequent rains, they are not heavy. Slight frosts occur as early as September. In the neighbourhood of Vancouver fruit-treees blossom early in April; in the middle of May peas are a foot high and strawberries in blossom. All fruits and vegetables are as as early there as in this country. Grass grows to the tops of the hills. According to Lieutenant Wilkes, 100 days were distributed into 70 fair, 19 cloudy, and 11 rainy. In many respects the climate of the middle section is less favourable; it is subject to droughts, and is warmer in summer and colder in winter. The air, however, is pure and healthy. The eastern section, under the snows of the Rocky Mountains, cannot be praised for its climate. It is subject to great and sudden changes of temperature, occasionally going through all the gradations of summer, autumn, and winter, in a single day. Respecting the western section of the Colony, we learn that it

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is peculiarly well adapted for agricultural operations. In some places there is a deep black vegetable loam, in others a light brown loam. The hills are of basalt, stone, and slate. The undulating surface is well watered and well wooded, bearing pine, spruce, red and white oak, ash, arbutus, cedar, arbor-vitæ, poplar, maple, willow, cherry, and tew, besides underwood of hazel and roses. All kinds of grain can be procured in abundance. Pears and apples succeed admirably, and the different vegetables produced in England, yield there most abundant crops. In the middle section, which is 1,000 feet higher than the western, excellent crops and large stocks of cattle have, it is said, been raised by the Missionaries near the Crusade Mountains. The eastern section seems little adapted for agriculture. However, grain and vegetables have been produced at Fort Hall, and cattle thrive without the necessity of being housed in winter. A market for the timber will eventually spring up in the Pacific, and there is abundance of water-power for manufactories. The Eraser and other rivers abound in salmon, sturgeon, cod, carp, sole, flounders, perch, herring, and eels, as well as crabs, oysters, and other shell-fish. The elk, the deer, antelopes, bears, wolves, foxes, musk-rats, and martens abound in the western section; buffaloes are met with in great numbers. In the spring and autumn the rivers are alive with geese, ducks, and other water-fowl.—*Canadian News.*

HARBOURS OF REFUGE.

(Concluded from page 243).

14. But admitting that every principle which regulates respective private interests in respect to the expenditure of public money, points to the justice of a charge being made upon shipping for the use of the Harbours, a question of importance has been raised before your Committee, which it is of the utmost consequence should be clearly determined. On one hand it is contended that a small and uniform charge should be made upon all ships navigating the part of the coast upon which these Harbours are proposed to be constructed, upon the principle that the expenditure is incurred equally for the safety and security of all, in the case of need, and that all alike will profit by the reduced risk and the consequently smaller premium which will be paid for insurance. This would be treating Harbours of Refuge exactly as Lighthouses are now treated in respect to the mode of their maintenance.—by dues upon shipping. On the other hand, it has been contended—admitting that the principle of payment is a right one—that the charge should be confined exclusively to those ships which actually use the Harbours, and that it should be sufficient to raise the necessary sum of money. This would be treating Harbours of Refuge in the same way as private trade Harbours are now treated,—those

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vessels only paying which enter them. It is contended, however, that there is in this respect the widest distinction in principle between the two classes of harbours; those of the one class are constructed chiefly for the private trade of the ports to which they are attached, those of the other for the general security and benefit of the entire trade passing the coast upon which they are constructed. There is, moreover, an important practical reason which has been brought before your Committee against the latter view of the case. It has been contended, and proofs have been adduced to maintain the reasoning, that such is the aversion of the masters of sailing ships to incur expenses on behalf of their owners upon their own responsibility, that they would too often rather incur great risks, which might prove fatal, than take shelter in such Harbours, especially as on this principle the charge would require to be considerable; and that thus the very object of the Harbours would be frustrated to some extent. As the saving of life as well as property is the main object for the construction of such Harbours, your Committee would wish a policy to be adopted in relation to them, which will induce to their freest and most extensive use. Your Committee is further of opinion, that it is a manifest fallacy to conclude that only the vessels which happen from stress of weather to be driven into them, are those which derive benefit from them; but that all vessels, the security of which has been promoted by their existence, share equally, as has been shown by the diminished risk. On every account, then, your Committee is of opinion that the first-named principle, that of making a uniform charge upon all ships passing such Harbours in their course, is just in the abstract: first, because it is just that all should pay for a benefit in which all participate; second, because if a general charge is made, a very small one, which will be scarcely perceptible, will suffice, while if only ships which happen to require to take shelter are to pay, the charge must be large; and third, because in the one case every inducement would exist for freely using such Harbours in case of need; while in the other case, a great inclination would exist to hazard the danger of the sea, rather than incur the expense of seeking shelter. Your Committee is fully aware of the long and deeply-rooted feeling so justly felt by those connected with shipping upon the subject of passing tolls. But this objection your Committee believes, from the evidence before it, has arisen almost entirely from the great abuses of that system in past times, when ships were required to pay passing tolls in respect to Lights and Harbours which did not lie in their course, and which could not be of any service to them, either as affording safety, or as reducing the estimated risk of their voyage. But it has been represented to your Committee, that since the light dues have been levied upon the obviously just principle of requiring vessels only to pay for such Lights as lie in their course, the objection alluded to has entirely disappeared. And your Committee would upon this subject desire to express its opinion in the strongest terms, that if this principle is adopted in respect to dues for Harbours of Refuge, the greatest care should be taken to impose such dues only upon ships which in their natural course

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would pass such Harbours, and which would therefore benefit by them.

16. The subject of "passing tolls" received much consideration from the Commissioners appointed to inquire into local charges upon shipping; and in their report they laid down principles in respect to them, which, to your Committee, appear sound and just. They say, "It appears to us, that the construction and maintenance of a Harbour of Refuge is a matter of interest, not only to those who seek and obtain refuge within the Harbour, but also, although indirectly, to the whole maritime trade of the adjacent seas. Every Harbour, however, which is worthy the name of a Harbour, must be regarded as affording, at certain times of the tide at least, an opportunity of refuge to vessels in its immediate vicinity, and many Harbours do annually afford refuge to a considerable number of vessels, either windbound or in distress. But the connexion between Harbours generally and the trade which passes by them is of so indirect and secondary a character, that this connexion would afford no justification whatever for the general imposition of passing tolls. IT IS ONLY WHEN A HARBOUR IS A HARBOUR OF REFUGE IN THE STRICT SENSE OF THE TERM, THAT ANY JUSTIFICATION, IN OUR JUDGMENT, CAN BE FOUND FOR THE IMPOSITION OF A CHARGE OF THIS NATURE."

"It therefore appears to us,—Firstly. That a passing toll levied for the construction, maintenance, or improvement of a Harbour is not necessarily unjust in principle. Secondly. That a toll of this character is unjust in principle, unless it be levied for the construction, maintenance, or improvement of a Harbour of Refuge in the strict sense of the term. Thirdly. That such a toll is unjust, even when levied for the maintenance or improvement of a Harbour of Refuge, unless the amount of revenue derivable from those who use the Harbour is insufficient to defray the expence thereof." These were observations made in reference to tidal trade Harbours, and with reference to which the claims of the four Harbours of Dover, Ramsgate, Whitby, and Bridlington, to the special privilege of levying a passing toll were examined; and as in none of those cases the conditions above stated applied, those tolls were, as your Committee thinks, most justly, recommended to be abolished, inasmuch as the ships upon which they are charged, are not, and cannot be, in a majority of cases, benefited by them. Your Committee entirely agrees in the general principles thus laid down by the Commissioners as quoted, and would apply them in their strictest sense, in reference to the Harbours of Refuge, which they have recommended. In the words of the Commissioners, these works would be "Harbours of Refuge in the strict sense of the term," constructed and maintained expressly for such purpose, available, not only at "certain times," but at all times of the tide, and affording to all vessels navigating the waters in their vicinity, always a safe refuge in the case of need; a charge, such as has been suggested for such Harbours, would be entirely in the spirit of the observations made by the Commisioners, and could not be exposed to any of the objections so justly raised against the passing tolls

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inflicted upon shipping for the four Harbours of Ramsgate, Dover, Bridlington and Whitby.

17. In considering, however, the amount of the charge which may fairly be imposed upon shipping for the construction and maintenance of these Harbours, your Committee is of opinion that there are plain grounds upon which shipowners should not be called upon to defray the whole. In some respects the utility of such Harbours would be of a character for which the public revenues of the country might fairly be called upon to contribute; for example, all the works recommended would be less or more useful for vessels of the Royal Navy taking shelter; and as coaling stations for ships of war, there being at present no Harbour between Flamborough Head and the Fern Islands where such a vessel can coal; they would also be useful as national defences, the fixed Breakwaters affording great facilities for the erection of powerful batteries. Again, the effort to save life may fairly be classed as a national object. For these reasons your Committee is of opinion that any such charge upon shipping should be placed at an extremely moderate amount, even though the revenue derived from it did not reach the sum required for the purposes indicated. With regard to what the charge should be, Captain Sulivan has suggested a rate of *one penny per ton* upon all vessels which may be considered to be benefited by the Harbours to be made.

18. The conclusion to which your Committee has arrived, therefore, is, that such a charge, if imposed, should not exceed, in any case, *one penny per ton* upon all ships entering into, or clearing from, ports in the United Kingdom, which ships, in the ordinary course of their voyages, would pass the Harbours to be constructed; and that whatever rate is fixed upon at first, it shall be reduced from time to time, so as not to exceed a total sum, which shall be equivalent to three-fourths of the interest, which should be computed at the rate of 3 per cent., and of the cost of maintenance. Your Committee feels more confidence in recommending this principle of a small charge for adoption, because it is one so manifestly fair to the rest of the community, that no such objection can be taken to it as would be likely to interfere with the speedy construction of these important works; whereas it would have much less confidence in that object being attained, if the charge were proposed to be entirely defrayed from the Consolidated Fund; against which, objections might, with every appearance of justice, be raised by those not interested in shipping, or seaport communities. Your Committee is aware that it would require great care to carry out the principle in all its details, but is of opinion that this duty may fairly be left to Her Majesty's Government.

19. With regard to the best mode of construction for Harbours in deep waters, your Committee has taken some evidence. There are three modes at present in use: the first may be termed Mr. Rendel's plan, which has been so successfully adopted at Holyhead and at Portland; the second, which is a modification of the first, is one recommended by Mr. Abernethy, and upon which he has constructed a Harbour at Blyth; and the third is the plan of building walls of masonry

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by means of the diving-bell, as in use at Dover. The first and third of these plans will be found to be described in great detail in the evidence given by Mr. Coode, the engineer in charge of the works at Portland; the second plan will be found to be described in the evidence of Mr. Abernethy. A fourth plan of constructing Breakwaters was submitted to your Committee by Mr. Hayes, which will be found to be described in his evidence. No Breakwater has been constructed upon this plan in this country, but it is stated that it is being adopted at Melbourne, in Australia. With regard to the constructions proposed in this Report, your Committee is disposed to view favourably the plan invented by Mr. Rendel, as used at Holyhead, or as modified by Mr. Abernethy,—first, because it is much the cheapest; second,—because works can be accomplished in that way much more speedily than in any other; and thirdly,—because in all the cases referred to, there is abundance of material upon the spot to make that plan practicable.

20. Upon the subject of employing convict labour in the construction of Harbours of Refuge, your Committee would refer to the evidence given by Mr. Coode.

21. During the course of the inquiry which your Committee has conducted, much evidence has been received upon the improvements of which the existing tidal Harbours are susceptible, as bearing upon the general question of refuge in the case of need for passing vessels. Captain Vetch has expressed strongly his opinion of the great advantages which would be derived from such improvements to the general shipping of the country. But your Committee, however sensible it may be of the advantages which might be obtained from such improvements, is of opinion, that this subject should not be mixed up with that of Harbours of Refuge, properly speaking, but should be kept entirely distinct, and should be left to the local managements of each individual port. Many of these ports are in possession of considerable incomes from the dues which they charge upon the shipping resorting to them, and have shewn a desire to use every means in their power to render the accommodation of their Harbours more complete, and the approach to them more secure. At Newcastle-upon-Tyne, large works have been undertaken, and are in progress. At Sunderland, considerable funds are at the disposal of the River Wear Commissioners, and, if applied to the extension of the piers, would be productive of great benefit. It has also been shewn, that comparatively small sums of money laid out upon the port of Lowestoft, and other parts of that coast, would add greatly to the convenience of their trade as well as to the security of the passing ships. Improvements have been suggested on the south coast, especially near Newhaven; on the coast of Wales, also, and especially at Cardigan, Fishguard, and Newport, it has been represented that essential improvements might be made. But, important as all these may be, especially in reference to the local trades of each, your Committee is not prepared to recommend the outlay of public money upon them, so as to interfere with the great and important national works which have already been adverted to. There is, however, one suggestion which your

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Committee feels it its duty to make upon this subject, with the view of facilitating these local improvements. Many of these ports are, as has been remarked, in possession of considerable incomes from their own private sources, and are disposed to apply them to these purposes; but these resources would be more available for the required works, if they were able to borrow larger sums, upon the principle of mortgaging their present surplus income or future dues, to repay the same within a given number of years, upon the same plan as the drainage loans, or the loans made by the Public Works Loan Commissioners, for various purposes. In many cases applications have been made to those Commissioners, but it is believed, that the funds placed annually at their disposal by Parliament are too limited in amount, and have too many claims of other kinds upon them, to enable them to entertain some of these applications. Your Committee is therefore of opinion, that it would be in every way consistent with sound policy to encourage local efforts for the improvement of such Harbours, by voting a moderate sum annually, to be specially appropriated to such Harbours, upon the same principle and under the same regulations as were applied to the large amount advanced for the purposes of drainage. And looking to the great importance of the object to be attained, your Committee would recommend that such loans should be made at a rate of interest not exceeding 3 per cent., and should be made repayable by means of a sinking fund extended over a period of 50 years.

22. In conclusion, your Committee cannot too earnestly press upon the House the strong conviction which it has received from the investigation it has conducted, as to the necessity, on national grounds, of these works being undertaken at as early a period as possible, and placed under some system which will secure their steady and speedy progress. Allusion has already been made to the extraordinary increase which has taken place in the amount of shipping entered inward and outward in the foreign trade during the last 15 years; the increase having been from 9,824,562 tons in 1843, to 23,178,732 tons in 1857; but it must be remarked, that in addition to this great increase in the foreign trade, the coasting trade has also increased during the same period from an aggregate of 22,133,000 tons entered inward and outward in 1843, to an aggregate of 27,065,000 tons in 1857. This increase has taken place steadily from year to year, notwithstanding the occasional checks which have been received during that period to the commercial prosperity of the country, and there is no reason, that your Committee can discover, why it should not proceed at the same rate. But it must be obvious, that it will be just in proportion as the waters upon our coasts and the approaches to our Harbours become crowded, that the risk will be increased, especially when ships become unmanageable in severe storms. If then we are to look forward for ten years, the period which it is assumed will be required to complete the works recommended, it is probable that the continued increase of our trade over that space of time will be such as will show that improvements of the character

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pointed out in this Report have become absolutely indispensable to the further development of our shipping which will have taken place. Your Committee feels that it may be laid down as an indisputable axiom, sustained by experience, especially of late years, that while the extent of our coasts and the natural facilities they afford for navigation are limited, the trade of the country, and consequently its shipping, are capable of and destined to an indefinite expansion; and that the only way therefore by which the former can be rendered commensurate for the requirements of the latter, is by supplementing the natural facilities which we possess, by the construction of great national works upon our coasts, such as your Committee has ventured to recommend. The sum required for them, though considerable of itself, is, your Committee would submit, trifling when compared with the great objects which are to be attained by it: and if the recommendations of your Committee are adopted, even that amount may be prevented, at least in part, from being any permanent charge upon the finances of the State; but even were it otherwise, your Committee will venture to express an opinion, that considering what constitutes the chief source of the commercial greatness and the political security of this country, and considering the enormous loss both of life and property to which the nation is at present exposed from the dangerous and unprotected state of our coasts, and the consequent defective character of our navigation, there is no object for which public money could be more usefully or more profitably employed, having regard to the present and future welfare of the nation.

17*th June* 1858.

OFFICIAL REPORTS ON THE LOSS OF THE S. S. "NEW YORK."

The following Reports of the Justices, and of Captain Harris, Nautical Assessor, who held the inquiry at Campbeltown, into the loss of the Screw Steamer *New York*, Capt. M'Millan, from the Clyde, for New York, which was lost near the Mull of Kintyre, in June last, have been presented to the Board of Trade.

REPORT OF JUSTICES.

The Justices find that no blame can be attached to Captain M'Millan regarding the wreck of the *New York*. They find he was attentive to his duties, and did everything in his power for the safe navigation of the vessel, and they order his certificate to be returned to him. They are further of opinion that it would have been a prudent precaution had he taken soundings after loosing sight of Sanda; but considering the uniform and great depth of the water in the Channel, the fact of the bearing and distance of Sanda having been taken such a short time before, the confidence Captain M'Millan had in his position, and the fact of his requiring to stop his vessel for a quarter-of-an-hour in a strong tide to get a cast of the lead, they are not surprised that he did

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not do so. The Justices further find it sufficiently proved that Captain M'Millan steered the proper course to take him clear of the land, and they beg to report to the Board of Trade, that it is their opinion, that the cause of the shipwreck was some defect in the compasses over which Captain M'Millan had no control.

JOHN L. STEWART, J.P.
GEORGE MACNEAL, J.P.

REPORT OF CAPTAIN HARRIS.

My Lords—At the late investigation at Campbeltown into the causes which led to the loss of the *New York*, the Justices have reported to your Lordships "that no blame can be attached to Captain M'Millan," the Master, and that the ship was lost from "some defect in the compasses over which Captain M'Millan had no control," a finding in which I cannot concur. The main facts of the case may be thus briefly narrated, and are taken principally from the evidence of Captain M'Millan. The *New York*, an iron screw steam-ship, of the burthen of 2094 tons, well found in every respect, with 210 passengers and a valuable cargo, sailed from the Clyde, bound to New York, on the afternoon of the 12th June last. She passed the Cumbrae Lighthouse, at the entrance of the Clyde, at 7.30 p.m. At 9.30 p.m. she passed Pladda, bearing N.N.E., a clear and beautiful evening. From thence a course was shaped W. by S. ½ S., till Sanda Light was made upon the starboard bow at 11 p.m., at a distance of five miles. The course was then altered to W.N.W. for the space of three-quarters of an hour. At 11 45 p. m. the Light on Sanda Island was still visible, and the bearing of it is stated to have been E., and the distance from it computed at six or eight miles. At this time the ship was still going at the rate of 11¼ knots an hour. The course was then altered to N.W.: and about thirty minutes afterwards the ship struck, and remained fast upon the ledges of the rock near Deas Point. The loss of the ship was attributed by the Master to "some magnetic influence acting upon the compasses." The first well-defined position after leaving the Clyde was at 9 30 p. m., Pladda Light then bearing N.N.E., at a distance of two miles. It was at that hour good daylight, a fine summer's evening, and it may be presumed that the distance from this point was correctly stated. At 11 p. m. Sanda Light was sighted on the starboard bow, at a computed distance of five miles, but the bearing is not stated—it was not taken. The ship's head is stated to have been W. by S. ½ S. at that time. The course was then altered to W.N.W., and so continued for three-quarters of an hour. This course would have taken the ship within a short distance to the southward of Sanda Island, which is bold to approach. At 11 45 p. m. Sanda Light is stated to have borne east, the distance from it estimated at six or seven miles. Here, in my opinion, occurs the first great error in judgment, in estimating the distance of the ship from Sanda. The ship at this time, by the Master's own evidence, could only have run, in the three-quarters of an hour, eight or eight and a half miles from his position at 11 p. m., when Sanda Light was stated to have been five miles upon the starboard bow. The distance run would only have placed him two miles and a half or three miles to the westward of Sanda. At this time (11 45 p. m.) the night became overcast and hazy, the Light on Sanda indistinctly seen—so indistinct that fifteen minutss afterwards, a bearing of it could not be taken. Nevertheless, the course had been altered at 11 45 p. m. to N. W., or towards the Mull of Kintyre, and still running at the rate of 11¼ knots. At midnight, a dense fog settled down upon the ship and over the land. By the Master's own

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calculation, the ship was not at this time sufficiently advanced to the westward as to open the Light upon the Mull of Kintyre, even had the weather been clear. The course was not continued to the W.N.W., which might have been done with perfect safety for some time longer. The speed of the ship was not checked, and the deep-sea lead was not hove, which would at once have denoted by the soundings that the ship was still to the eastward of the Mull of Kintyre. The Master's plea for not getting a cast of the lead seems to me totally inadmissible, viz., that it would have delayed the ship ten minutes or a quarter of hour, and that on a voyage to America. The tide was a spring flood during the evening, and the ship is said to have struck about high water. It is well known that the flood tide in this locality sets to the eastward, inclining to the northward towards the Sound of Sanda. It is denoted upon the Admiralty chart (Robinson's), by which the Master navigated the ship. The last of the flood tide had been against the ship, and retarding her progress from the time of hauling to W.N.W. in rounding Sanda, and might reasonably account for the ship not being so far to the westward as was supposed. The Captain appears to have been aware of the dangerous race that runs round the Mull, but that fact does not appear to have called forth additional caution on this occasion. From the evidence of Mr. Walker, an optician of Glasgow, it appears that he had adjusted the compasses, by swinging the ship, shortly before the *New York* left the Clyde. He had adjusted this ship in 1854, 1856, and again on the occasion now under review. He remarks in his evidence—"I always considered this ship the most satisfactory that ever came under my notice." It was unnecessary to disturb the magnets. A card of the local deviation (sent to their lordships with the report) had been furnished to the Master, in which it will be perceived that the local deviation, though increased in two years, is yet but so trifling for an iron ship as hardly to affect the calculation, the greatest deviation being 10 degrees westerly, and that upon a point in which they never steered. Moreover, the Captain had not noticed any error in his compasses from the Clyde to where the ship was lost. It is only after the casualty that he attributes blame to the compasses. The general correctness of the standard compass seems to be confirmed by the fact that at the time the ship struck her head was N.W. westerly, with a local deviation of 8 degrees westerly; and the Quartermaster, Alexander M'Dougal, who was steering the ship by the starboard compass, deposes to her head being N.W. by W.$\frac{1}{2}$W., with 30 deg. easterly variation. This small amount of difference between the two compasses will go far to prove the truth of the standard. I therefore reject the idea, thrown out by the Justices, that an unexplained deviation or "defect of the compasses" led to the loss of the ship. Having now reviewed all the circumstances of the case, and especially the evidence of Captain M'Millan himself, with reference to heaving the lead, I regret that I cannot acquit him of "all blame." I subjoin my question and his answer thereto on that material point. Referring to my previous examination, I put the following question to him:—"Are you now aware that, if you had then taken a cast of the lead, you would have known that you were to the eastward of the Mull of Kintyre?—*A.* I am now aware that I should have found decreasing soundings, and thus have known that I was to the eastward of the Mull of Kintyre." This grave omission amounts, in my opinion, to a default; I therefore declined to concur in the finding of the Justices, or to sign their Report.

I have the honour to be, my Lords, &c., &c.,

Hy. Harris, Nautical Assessor.

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NAUTICAL NOTES.

Opening of additional Ports in the Dutch East Indian Possessions:—The Board of Trade gives notice, that the following Ports will be opened to general trade on the 31st of May, 1859, in addition to those which have been already made accessible to foreign shipping in the Dutch East Indian Possessions—viz. in the Island of Java—Anjeer, Bantam, Nedramaijoe, Cheribon, Tegal, Pekalongan, Rembang, Passoeroean, Peobolingo, Bezoekie, Panaroekam, Banjoewangie, Pangool, Palzitan, Tylatiap, and Wynkoops Bay; on the west coast of Sumatra, Natal and Priaman; and Sampit, in the south-eastern portion of Borneo.

The Fire on Board the Sarah Sands, Transport Steamer:—The *Sarah Sands*, with the 54th Regiment on board, for Calcutta, on the 11th November 1857, (see *Mer. Mar. Mag.* No. for February 1858, p. 48) when upwards of 400 miles from Mauritius, in a gale, was discovered to be on fire. She was burning 15 hours, and it was mainly owing to the fortitude and firmness displayed by Captain Castle, the Commander, that the half-consumed ship and her living freight were got safely into port. On the intelligence reaching the Board of Trade, an application was made by that department to Messrs. Walton, the brokers of the ship, for the names of the crew and others who had distinguished themselves on this memorable occasion. From some unforeseen circumstance the communication was not forwarded to Capt. Castle until lately, the Commander having remained at Mauritius, where the Sarah Sands was. Captain Castle, on the receipt of the letter, forwarded the necessary information, and the following reply has been received:—"Office of Committee of Privy Council for Trade, Marine Department, Whitehall, June 19.——Sir,—I am directed by the Lords of the Committee of Privy Council for Trade to acknowledge the receipt of and to thank you for your letter giving, in compliance with the request of this Board, a statement of the names of those among the crew and passengers on board the steam-ship *Sarah Sands*, who distinguished themselves by their gallant exertions when that ship was nearly destroyed by fire, on the 11th of November last. My Lords have, since making the above request, carefully considered the provisions of the Act, which enables them to grant rewards for gallantry in saving life at sea, and they direct me to state, that they have come to the conclusion, that although they are most deeply impressed with the very unusual courage, energy, and good discipline evinced by yourself and others on the occasion in question, they doubt whether the Act of Parliament would justify them granting rewards in this case, and they

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fear that they could not grant such rewards without setting a precedent, which might lead them hereafter into very great difficulties.—I am, Sir, your obedient servant, O. H. FARRER. To Capt. T. S. CASTLE, late master of the *Sarah Sands*."

Baltic:—Denmark—Submarine Telegraphic Cable in the Little Belt:—A Submarine Telegraphic Cable has been laid down in the Little Belt, from the coast of Jutland 100 fathoms W. of the Snoghöi Ferrybridge to the coast of Fyen, 10 fathoms E. of the Kingsbridge (Kongebroen). The situation of the Telegraphic Cable is accurately marked by two Red and White painted Beacons, erected on the southern side of the Belt to the eastward of the Kingsbridge, of which Beacons, the nearest to the strand stands over the south end of the Telegraph Cable, and the more remote indicates the direction of the line in which the Cable is laid down in the Belt. Mariners who pass the Little Belt are requested *not to anchor* over or in the vicinity of the above-mentioned Telegraphic Cable, as any person wilfully or negligently damaging the same is liable to punishment and cost of repairs, according to the Law of 29th December, 1853.

Cape Verd Islands—Value of Foreign Currency:—H. M.'s Acting Consul at Saint Vincent, Cape de Verd Islands, reports, that by a recent order of the Finance Committee of those Islands, foreign currency will bear the following values:—

		Milreis.	Reis.
GOLD.			
Doubloons	Spanish, Peruvian, Chilian, Bolivian, Mexican, Buenos Ayres, Equator, and Central America, and New Grenada	14	600
Half Doubloons ..	Ditto	7	300
Quarter Doubloons	Ditto	3	650
Eagles of 10 dollars	United States of America	9	200
Half Eagles	Ditto	4	600
Peças.....	Brazilian	8	000
Half Peças	Ditto	4	000
Coins of R4 *s* 000	Ditto	4	500
Sovereigns.....	English	4	500
Half Sovereigns ..	Ditto	2	250
SILVER.			
Dollars	Spanish (pillar dollars and others), Chilian, Peruvian, Bolivian, United States, America, Mexican, Brazilian, Buenos Ayres, & Columbian	..	920
Five Franc Pieces	French	..	860

Cuba.—Port of Guantanamo.—H. M.'s Consul-General in Cuba, states that a Notification had been issued by the Captain-General

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of Cuba, that, on and after the 1st of August 1858, the Port of Guantanamo, in that island, would be open to foreign commerce.

France—Adoption of the system of examination for Officers of the Merchant Service:—The French Maritime authorities appear to be disposed to adopt the system of examination pursued by our Local Marine Boards. The "*Journal du Havre*" contains a list of successful candidates at a recent examination, held at Cherbourg, on the 13th instant, on the practice and theory of Navigation. The examination appears to have been held under the direction of the Minister of Marine, and the candidates selected are authorized to take command of Merchant vessels, on either certificates of service or of seamanship.

Netherlands.—Adoption of the New Admiralty Regulations respecting Lights and Fog Signals:—The Netherlands official *Gazette* publishes two decrees respecting the exhibition and use of Lights and Fog Signals on board ships:—1. On board all sea-going vessels. 2. On board vessels (not sea-going) trading on the river and inland waters of the Netherlands. The regulations for sea-going vessels are the same as those recently prescribed by the British Admiralty, and are, like them, to take effect on and after the 1st of October next.

REWARDS AND TESTIMONIALS.

The following gratifying testimonial was presented to Captain **Duncan**, of the ship *Admiral Lyons*, who left Liverpool for Sydney in June last, with 448 passengers, making the passage out in 93 days:—

"Ship *Admiral Lyons*, Sept. 10, 1857.

"To Capt. Duncan.

"Sir,—We, the undersigned passengers on board the above-named ship, feel that we cannot leave her without expressing how deeply sensible we are of your untiring zeal for our welfare and safety during the voyage, and the confidence we have felt in your skill; more especially we desire to make known our sense of gratitude, for the urbanity and kindness you have shewn to one and all, and we hope that you may long continue in the enjoyment of every prosperity."

[Signed by the Single Male Passengers].

"In conclusion we beg to state, the Young Women, and Married Men on behalf of their wives, entirely concur in the foregoing remarks; and all are extremely desirous of stating our high sense of admiration for the conduct of the officers and crew, who one and all have vied with each other in endeavouring to make our comforts as great as possible."

[Signed by the Young Women and Married Men].

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H. M.'s Government have awarded to Mr. Richard Korsch, royal pilot, commander of a Prussian life-boat, and to the 14 men forming the crew, a Silver Medal each, for their gallantry in saving the crew of the *Ocean Queen*, of Sunderland, wrecked near Pillau, on the 5th April last.

His Imperial Majesty the Emperor of the French has awarded Thomas Storey, late master of the *Titania*, of Newcastle, a Gold Medal, for services rendered by him to the French vessel *Elodie Antonie*, on the 23rd November 1848.

The American Government has awarded a Chronometer and Gold Chain each to the under-mentioned :—

To Isaac Heigho, master of the barque *Enterprise*, of London, as a mark of the grateful sense entertained by the American Government and people, for his successful efforts in saving the master and crew of the American barque *Victor*, of Plymouth, in March last, in lat. 6° N. long. 31° 30′W.

To William Slaughter, master of the British barque *Sarah Dorothy*, for saving the crew and ten passengers of the American ship *Harkaway*, of Charleston, South Carolina, burnt at sea in the month of September 1857.

To William Griffith, of the British ship *Lady Louisa*, of Liverpool, for saving the lives of the crew of the American ship *Lone Star*, of Portland, in November last, when bound from Moulmein to Cork.

CERTIFICATES CANCELLED.

A Naval Court, under the provisions of the Merchant Shipping Act, 1854, was held at the British Consulate, Constantinople, on the 6th July 1858, to investigate and adjudicate upon charges of repeated acts of drunkenness, reckless expenditure of money belonging to the ship, delaying his ship improperly and unnecessarily in the Danube, and general irregularity of conduct as master of a ship, preferred against William Jones, master of the schooner *Rachel Harrison*, official number 26,797, by Messrs. A. & S. Argenti, merchants, at Galatz. The charges having been fully proved, the Court directed the dismissal of the accused from the ship. The Board of Trade have also directed that the Certificate of Service as Master, number 41,913, belonging to the said William Jones, should be Cancelled.

At a meeting of the Local Marine Board for the port of London, on the 5th of August, an Investigation was held into a complaint made by Messrs. Orr & Templeton, owners of the brig *Hannah Jane*, against Andrew Gilmore, master of that vessel, for detaining the said ship through drunkenness, and for general neglect of duty. The owners having stated that Capt. Gilmore had purposely absented himself, the Board proceeded with the inquiry in his absence, and, after hearing the evidence, adjourned the case to the 12th instant, in order to give the accused an opportunity of appearing to disprove the charges, for which purpose a summons and a letter were forwarded to his address. On the

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investigation being resumed, on the 12th instant, Capt. Gilmore not appearing to answer the summons, the Court, considering the charges fully proved, were of opinion that his Certificate of Service, No. 71,562, should be Cancelled; which recommendation the Board of Trade have directed should be carried into effect.

At the Court of the Resident Magistrate, Cape Town, on the 17th June last, Robert Kellow, Master of the ship *Countess of Yarborough*, of London, was tried upon charges of drunkenness and obstructing the sailing of said vessel, preferred against him by Thomas Tinley, Esq., Shipping Master, Cape Town. Defendant did not appear although he was personally summoned. It being the opinion of the Court that there existed sufficient ground for removing the Master from the command of the ship, and the above having been represented to the Board of Trade, their Lordships have directed that the Certificate of Competency, No. 526, of Robert Kellow, shall be Cancelled.

ROCKS AND SHOALS.

Australia—South Coast :—Henty Reef :—A Reef, called by this name, on which the sea only breaks occasionally in bad weather, has been found to exist off Apollo Bay, between Cape Otway and Port Phillip, South Australia*. The depth upon it is not more than 18 feet at low water, with 10 fathoms all round at less than a cable's length, and it lies N.E.$\frac{3}{4}$E. easterly, 11 miles from Cape Otway Lighthouse, and S.E.$\frac{1}{2}$S. 2 miles from Cape or Point Bunbury.

Bearings Magnetic. Var. 9° East in 1858.

N.B.—This Reef is Buoyed—for the particulars of which see p. 287.

* See Admiralty Charts:—Australia, General, No. 1,042; Bass Strait, No. 1,695; also, Australia Directory, Vol. 1, page 99.

Australia—East Coast :—Megæra Rock† :—H.M.S. *Megæra*, on the passage from Sydney to Calcutta, passed about a cable's length to the northward of a pinnacle rock near the Howick group of islands, inside the Barrier Reef, east coast of Australia. The Rock was not examined, but appeared to have about 6 feet of water over it, and its approximate position is 4½ miles east of the southernmost (No. 3) Howick Island, or in lat. 14° 32½′ S., long. 145° 6½′ East of Greenwich. *Bearings Magnetic. Var. 7° 20′ East in 1858.*

† See Admiralty Chart; Australia, East Coast, Sheet 19, No. 2,352.

England—W. Coast—Rock off Lundy Island.—A detached Rock, named the Lee Rock, lying off the south end of Lundy Island in the entrance of the Bristol Channel, not being generally known (although nearly in the direct track of vessels rounding the Island to seek its protection in westerly gales), the following information is published for the benefit of the mariner.

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The Rock, which has a depth of 9 feet over it at low water, and the weeds upon it exposed during a heavy sea or ground swell, lies nearly under Morisco Castle, with the Black Rock, off Shutter Point, W.N.W. 7 cables' length, and the south-east extremity of Rat Island N.E. by E. one-third of a mile.

Caution.—The mariner is cautioned to give the south end of the island a berth of half a mile, nearly, when rounding it to enter Lundy Road, so as to avoid this danger.

CONDENSED LIST OF

CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from July 25th to August 25th, 1858.

England—West Coast—Liverpool Bay:—On the 18th August 1858, the following changes would be made in Lighting and Buoying the approaches to the port of Liverpool:—

The FORMBY LIGHT-VESSEL will be moved S.E. by E. ½ E. 3½ cables' lengths from her present position into a depth of 25 feet at low water, with the Crosby Light-vessel bearing S.E. ½ S. distant 2¾ miles; N.W. Mark, E.N.E. ¾ E., 3⅞ miles; Q. Fy. Buoy (Bell Beacon) N.W. by W. ½ W. 2⅜ miles; V 3., Red Buoy, W.S.W. nearly ½ a-mile; and C 1., Red Buoy, S. by E. ¾ E. ½ a mile.

Buoys:—

Q. Fy. to be a Black Pillar Buoy bearing a bell, with perch and ball, on its summit marked Q. Fy., S.E. by E. ½ E. the course up the Channel, will be moved N.W. by W. ½ W., 350 fathoms into 6 fathoms at low water, and lie with Formby Light-vessel and Crosby Lighthouse in line S.E. by E. ½ E., distant from the former 2⅜ miles; N.W. Light-vessel, S.W. 4⅝ miles.

Q. 1. Black and White chequered Buoy will be moved N.E. 85 fathoms, into a depth of 12 feet at low water, with Formby Light-vessel S.E. ¾ E., 1⅜ miles. Q. Fy. (Bell Beacon) W.N.W. ¾ W., 1 mile; Q. 1. chequered Red and White Buoy, S.S.W. ¼ W., nearly ½ a mile.

C. 1. Red and White chequered Buoy will be moved W. by S. 75 fathoms into 12 feet at low water, with Formby Light-vessel E.S.E. ¼ E., 1⅜ miles; Q. Fy. (Bell Beacon) N.W. ½ W., 1 mile.

C. 1. Red Buoy to be moved S.S.E. ¼ E., 250 fathoms into 14 feet at low water, with Formby Light-vessel N. by W. ¾ W., ⅝ of a mile; S.V.I., Red and White striped can Buoy, W. by N. ⅝ of a mile; and Crosby Lighthouse, E.S.E. ¼ E., 3⅞ miles.

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C. 2. Black Buoy will be moved N. ¼ E. 150 fathoms into 23 feet at low water, with Crosby Light-vessel S.E. by S. 1⅜ miles; C. 1. Red Buoy, W., ⅝ of a mile; Formby Light-vessel, N.W. ¼ W., 1⅛ miles.

C. 3. Black Buoy will be moved N.E. ½ N. 90 fathoms into 29 feet at low water, with Crosby Light-vessel S.S.E. ¼ E., ¾ of a-mile; C. 2., Red Buoy, W. ½ S. nearly ½ a mile; C. 2., Black Buoy, N.W. ¼ N. nearly ⅔ of a mile.

F. 2. Black Buoy will be moved E. 75 fathoms into a depth of 7 feet at low water, with Crosby Lighthouse S.E. ¼ S. 2½ miles; N.W. Mark, N.E. ½ N. 1⅞ miles; F. 3., Red Buoy, S.W. ¼ W. ⅝ of a mile.

The old Bell Beacon will be superseded in its present position by a Black Nun Perch Buoy, marked V. Fy.

R. 1. Black Can Buoy will be superseded by the old Bell Beacon, to be marked R. 1. Spencers Spit.

Bearings magnetic. Variation 23¾° *W. in* 1858.

Kattegat—Coast of Jutland—Light on the Skagen or Skaw :—Before the close of the present year (1858) a Light will be exhibited from the new Lighthouse on the Skagen or Skaw, the north point of Jutland, at the entrance of the Kattegat.

It will be a Fixed White Light, placed at an elevation of 144 English feet above the level of the sea, illuminating with its greatest brilliancy from W. by S., round northerly to S.W. by S., and showing a *fainter* Light through the remaining points of the compass. The bright Light should be visible 17 miles, and the faint Light 12 miles in clear weather.

The Light tower is circular, built of red brick, and 126 feet in height. It stands E. by N., 1720 yards from the old Lighthouse, in lat. 57° 44′ 9″ N.; long. 10° 37′ 56″ E. of Greenwich.

On the exhibition of the new Light, the Light at present shown will be discontinued.

Bearings Magnetic. Var. 17° *West in* 1858.

Kattegat—Entrance to the Belts—Light on Samsoe Island :—In the Autumn of 1858, a Light will be exhibited from the Lighthouse recently erected on Vestborg Point, the south-west Point of Samsö Island, at the entrance to the Belts, Kattegat.

It will be a Fixed White Light, varied every three minutes by a very Bright Flash of 14 seconds duration, preceded and followed by an Eclipse lasting 11 seconds. It will be placed at an elevation of 118 English feet above the level of the sea, and should be visible in clear weather at the distance of 14 miles; the Flash at 16 miles.

Within a distance of 6 miles the Eclipses will be almost imperceptible.

The Light tower is circular, of brick, and 45 feet high. It stands in lat. 55° 46′ 14″ N.; long. 10° 33′ 22″ E. of Greenwich.

Bearings magnetic. Variation 17° *West in* 1858.

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Baltic—Gulf of Finland—Fixed Light on Kokskaer: On and after the 27th of May 1858, a Light would be exhibited from the Lighthouse reconstructed on Kokskär, a little to the eastward of the meridian of Revel, on the south shore of the Gulf of Finland.

It is a Fixed White Light, placed at an elevation of 100 English feet above the level of the sea, and should be visible from the deck of a vessel in clear weather from a distance of 15 miles.

The Light-tower is 97 feet in height; its base is broad, built of stone, and Red; the upper part is of iron, painted Red, and the lantern is painted Green. It stands in about lat. 59° 41¾′ N., long. 25° 1½′ East of Greenwich.

On the exhibition of the new Light, the temporary Light shown during the rebuilding of the Lighthouse would be discontinued.

Notice has also been given, that henceforth the Russian Lights in the Baltic and Gulf of Finland will be lighted all night in summer, which has not hitherto been done.

Also, that a Light-vessel, showing a Red Light, would be placed on the south side of the Kalbaden-grund, about 14 miles to the south-west of Glosholm.

And a Light-vessel shewing three White Lights to the north of Revel-stein or stone, near Revel.

Australia—South Coast—Beacons on Points Hayley and Bunbury:—The following Beacons have been erected on the coast to mark the position of Henty Reef, off Apollo Bay, between Cape Otway and Port Phillip, South Australia.

Two pillar Beacons, each surmounted by a ball, on Point Hayley, about 9 miles to the north-eastward of Cape Otway. The outer or seaward one is painted Black, the inner White, and they stand W. ¼ S. and E. ¼ N. 200 yards from each other.

Two Beacons of the same forms on Cape or Point Bunbury, the south-east point of Apollo Bay, about 11 miles north-east of Cape Otway. The seaward Beacon is Red, the in-shore one White, and they are 200 yards apart in a N.W. ½N. and S.E. ½S. direction.

Directions.—Vessels are cautioned to give Henty Reef a good berth. Those bound to the north-east must keep the Black Beacon on Point Hayley well open to the northward of the White one, until the White Beacon on Cape Bunbury opens well to the north-eastward of the Red Beacon.

Vessels proceeding to the south-west must keep the outer or Red Beacon on Cape Bunbury well open to the southward of the White one, until the White Beacon on Point Hayley is seen well open to the south-westward of the Black Beacon.

Bearings magnetic. Variation 9° *East in* 1858.

Scotland—W. Coast—Buoy on M'Killop's Rock, Salen Bay, Sound of Mull:—A Buoy, coloured Black, has been placed on the Rock in Salen Bay, Sound of Mull, commonly known by the name of Captain M'Killop's rock.

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Aros Castle, in line with Peak Ghorum, bears from the Buoy N. by W. ½ W.; South end of the North Green Isle, in line with Mr. John Sinclair's house in Morvan, bears E. by N.; the North end of Salen manse, in line with a Stone House on the beach, bears S.S.W. ¾ W.

NEW BOOKS.

Books published by the Admiralty :—	s.	d.
Channel Pilot. Coast of France from Cape de la Hogue to C. Barfleur. J. W. King, Esq., R.N. 1858	1	0
China Pilot. Second edition. 1858	5	0
Siam Gulf. 1858	1	0
Mediterranean Lights. Corrected by Commander Dunsterville, to August 1858	1	0
East India Lights. Corrected by Commander Dunsterville, to September 1858	0	6
France, Spain, and Portuguese Lights (Atlantic Ocean). Corrected by Commander Dunsterville, to September 1858	1	0
United States Lights. Corrected by Commander Dunsterville, to July 1858	1	6

CHARTS, &c.

Published by the Hydrographic Office, Admiralty, in August 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
England, S. Coast.—Portland to St. Alban's Head	2	0
Ireland, S.W. Coast.—Dunmanus Bay, with Views. Commander Church, R.N. 1850	3	6
West Indies.—Santa Cruz Island. John Parsons, Esq. R.N. 1856 ..	3	6
New Zealand.—Sheet 7. Cape Foulwind to D'Urville Island. Captain Stokes, R.N. 1851	3	0
New Zealand.—Kiapara Harbour. Commander Drury, R.N. 1855 ..	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "Editor of the Mercantile Marine Magazine, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

OCTOBER 1858.

A VOYAGE FROM ANTWERP TO SAN FRANCISCO, CALIFORNIA.

ABSTRACT LOG OF THE DANISH SHIP "BENJAMIN HOWARD,"

By Capt. LUD. SAABYE.

I send for insertion in the *Mercantile Marine Magazine*, the following particulars of my voyage from Antwerp to St. Francisco, Upper California, at the commencement of the present year. We left Antwerp, 25th January 1858: sailed through the canal in 36 hours, with a strong S.S.W. wind. From thence had westerly winds.

Feb. 5.—Lat. 40° 30′ N., long. 12° 59′ W., experienced a strong gale from the S.S.W. and S.W.; passed an English clipper. The gale commenced at 8 p.m., bar. then 29·70.

Feb. 6.—At 3 p.m., bar. 29·25, and at that time the wind suddenly shifted with the sun to N.N.W.; high confused sea; shortly afterwards it moderated; sky cleared; bar. rising.

Feb. 14.—Passed 30 miles to the West of Madeira.

Feb. 19.—When in lat. 23° 51′ N., long. 23° 26′ W. we fell in with the N.E. trade.

Feb. 24.—Winds, first and middle parts E.S.E.; latter E. by N.; unsteady breeze; hazy; bar. gradually falling. Lat. 9° 5′ N., long. 27° 34′ W.: current W.S.W.$\frac{3}{4}$W. $\frac{1}{3}$ of a mile per hour.

Feb. 25.—Winds, first part E.S.E.; middle E.; latter E.N.E.; same weather; upper strata of clouds passing to the Eastward by the moon: lat. 6° 44′ N., long. 27° 20′ W.; current southerly.

Feb. 26.—Wind E.N.E.; latter part E.; moderate; cloudy; rain at times; weather very close; lat. by D R. 4° N., long. 27° 7′ W.

Sailed with the N.E. trade 7 days, and lost it in lat. 4° N. Extreme long. between which we had it 23° 26′ to 27° 7′ W. No Gulf-weed seen.

Feb. 27.—Winds E.S.E. to S.E.; first and middle part light and calm, rain at times: lat. 2° 32′ N., long. 27° 45′ W.; in the last 48 hours the current has set us 40 miles to the westward.

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Feb. 28.—Winds S.E. to S.S.E.; very light; clear sky; appearance to trade; lat. 1° 32′ N., long. 28° 36′ W.; current W. by S., 1 mile per hour.

March 1.—Wind S.E. by S. to S.E.; light; at 10 p.m. passed 22 miles to the eastward of St. Paul's, without seeing it; lat. 0° 7′ S., long. 29° 18′ W.

March 2.—Wind S.E. throughout; fresh breeze and pleasant; lat. 3° 10′ S., long. 30° 7′ W.; current W.S.W., 1 mile per hour.

March 3.—Wind S.E. by E. throughout; fresh; lat. 6° 32′ S., long. 30° 54′ W.; current S.W., ¾ of a mile per hour.

March 4.—Wind S.E. by E.; fresh and pleasant; lat. 10° 4′ S., long. 31° 36′ W.; current S.W. by W., nearly 1 mile per hour.

The passage from 10° N. to 10° S. occupied 8 days and 8 hours.

Sailed with the S.E. trade 7 days; fell in with it in lat. 1° N., and lost it in lat. 18° S.: extreme long. 28° 36′ to 35° 5′ W. From thence to 50° S. I had the wind from all quarters, mostly fine weather.

April 1.—Winds, first part S.S.W.; middle W.; latter W.S.W.; commences with light airs and calm; overcast sky; large clusters of kelp; many birds; 65 days out; variation by Azimuth 20° E. Lat. 50° 35′ S., long. 65° 55′ W. Bar. 29·50; pleasant weather.

April 2.—First part light, from W.; middle, fresh, W.S.W.; latter, S.W. Double-reefed topsail breeze, clear sky, multitudes of petrels about; current N.E., 0·3 mile per hour; bar. steady. Lat. 53° 11′ S., long. 66° 19′ W.

April 3.—First part light and baffling airs, with hail; middle, moderate, W.S.W., and clear. At a.m. entered the Straits of Le Maire with royals and studding-sails set, but as we advanced further in the Straits, we got suddenly such severe gusts from the high land of Tierra del Fuego, that we were obliged to close reef; the sea was in one foam, whirling as if drawn up by a water-spout; latter part W.N.W. At noon Cape Good Success W.S.W. per compass, distant 10 miles. Var. by Amplitude 21° E.

April 4.—First part, W.; middle and latter, W.S.W.; strong gale, with heavy squalls, and hail, thunder, and lightning; under close reefed main topsail and 5 small stormsails. Vessel laboured hard, and shipped large quantities of water. Albatrosses and Cape Pigeons about. Bar. 29·0, ther. 46°. Current N.E., about 0·8 knots per hour. Lat. 55° 48′ S., long. 65° 21′ W.

April 5.—First part, S.W.; middle, S.W. and W.; latter, W.S.W.: commences with strong gale; during the night, thunder, lightning, and hail. Meteors on the yard-arms and mast-head: latter part, squalls less severe, set reefed foresail and close reefed fore-topsail. Noon, wind increasing, took in foresail. Bar. 29·08: current N.E. 0·3 knot per hour. Lat. 56° 6′ S., long. 64° 26′ W.

April 6.—First part, S.W. gale; middle, W.S.W., decreasing a little, set reefed courses and jibs, reef out of the spanker; latter part, calm. Bar. 29·18, therm. 44°. Lat. 56° 50′ S.. long. 64° 20′ W.

April 7.—First part, N.W. by W.; middle, W.N.W.; latter,

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W. by N.; unsteady and calm, fine throughout; top-gallant sails set; saw several whales: no observation. Lat. 56° 50′ S., long. 66° 30′ W.

April 8.—Light airs from N., followed by calm, with rain; latter part, fresh, S.S.W.; saw several whales: no observation. Lat. 57° 5′ S., long. 68° 42′ W. Bar. fell down to 28·50 as soon as the wind came from the S. At noon, bar. 28·68.

April 9.—First part, fresh from S., sky overcast; middle, S.W.; latter, baffling. At 5 p.m., Diego Ramirez in sight; last 48 hours, easterly current, at the rate of 1½ miles per hour: a.m. fine weather; noon, Diego Ramirez in W.¼S. by compass; high S.W. swell; var. 23½° E. by Azimuth and Amplitude. Bar. 29·55, therm. 46°. Lat. 56° 39′ S., long. 68° 11′ W.

April 10.—Calm throughout; beautiful weather; high S.W. swell; fed the Cape pigeons alongside like tame ducks. Noon, Cape Horn bore N. by compass. Bar. 29·84, therm. 46°.; var. 24° E. Lat. 56° 40′ S., long. 67° 58′ W.

April 11.—First part, calm, and fine weather; at sun-set, still saw Diego Ramirez from the top. Cape Horn (that is to say, the mountains inland) in sight from the deck; had a beautiful night; the Milky Way, Megallanic Clouds, and a black spot in the constellation of the Southern Cross seen for some time; middle part, wind from N.; latter part, N.N.W., increasing breeze; overcast, drizzling rain. No observation. Lat. 57° 6′ S., long. 72° W. Bar. 29·50, therm. 48°, temp. of water 46°.

April 12.—First part, heavy squalls, W.S.W.; second reef in the topsails; wind hauled with the sun to W.; middle, W.N.W.; squalls more moderate, reef out of the topsails, wind again more Northerly; latter part, stiff breeze from N.W.; overcast sky; ship pitching very heavily; passed by the homeward bound British ship *Hotspur*; last 48 hours the current set E.N.E., 26 miles. Bar. 29·50, therm. 46°. Lat. 57° 7′ S., long. 72° 58′ W.

April 13.—Wind N. W. throughout: first part, gale and high sea, second reef in topsails; middle, increasing, ship labouring heavily, mainsail and jib in; latter part, more moderate, set mainsail and jib; several species of sea-weed about the ship; no current. Lat. 57° 28′S., long. 76° 25′ W. Bar. 28·98, therm. 47°, temp. of water 43°. Var. by Azimuth 25¼° E.

April 14.—Wind W. to N.W. and back to W.; double-reefed topsail gale; thick foggy weather at times; rain; high W.S.W. sea; lat. 58° 3′ S., long. 79° 25′ W., bar. 29·20. No observations.

April 15.—Wind N.N.W. to N. and back to N.N.W.; strong gale throughout; very high sea; vessel labouring very heavily and shipped great quantities of water; mainsail and jib in; close reefed; D.R. lat. 57° 28′ S., long. 82° 25′ W.; bar. 29·0., ther. 46°., water 43°.

April 16.—First part N.N.E. gale; middle calm, heavy rain; at 9 a.m. a little westerly breeze sprang up, sky cleared off, tacked twice; lat. 56° 47′ S., long. 83° W., bar. 28·80, ther. 46°, water 43°, var. by Amplitude 26°E.

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April 17.—Winds, first part W.N.W.; middle W.; latter W.S.W.; fresh breeze and passing clouds; a.m. a beautiful rainbow visible forming an entire circle, half on the sky and half on the water; high westerly sea; multitudes of birds about; lat. 56° S., long. 83° 44′ W., bar. 28·92, ther. 46°, water 43°. Set top-gallant sails.

April 18.—Wind W.N.W. and N.W. by W. throughout; first, unsteady breeze, snow and rain; middle increasing, hard squalls, two reefs in the topsails; spoke Hamburgh barque *Mercurius*, from Hartlepool to Iquique, 102 days out; latter part strong gale, reefed courses, jib in; had a very heavy sea from the west, ship pitching heavily and shipped much water; lat. 54° 26′ S., long. 82° 51′ W., bar. 28·80, ther. 45°, water 43°, var. by Azimuth 26° E.

April 19.—First part N.N.W.; middle and latter W.N.W.; first and middle heavy gale; latter part wind abating, sky cleared; noon, calm; current the last 48 hours E. 20 miles; lat. 54° 34′ S., long. 83° 25′ W.

April 20.—First part calm; middle light, from S.S.E.; latter fresh from S.W.; current S.S E.; lat. 52° 22′ S., long. 84° 24′ W., bar. 29·05, ther. 45°, water 44°.

April 21.—Wind S.W. throughout; first fresh, with snow and rain; middle abating; latter fine, no observations; lat. 50° 10′ S., long. 85° 16′ W., bar. 29·42, ther. 47°, water 47°.

From the parallel of 50° S. to 40° S. we had great difficulty in getting to the north as the wind was constantly from N.W. and N.N.W.; had bad weather generally until we reached the parallel of 30° S.

May 10.—At noon Easter Island bore W.N.W. by compass, 24 miles distant; wind easterly, weather squally, sky overcast; var. by Azimuth 11° E., bar. 29·75, ther. 66°, water 71°. Had no good observations, but according to my belief, the island is situated south of her position on the chart; passed several clusters of seaweed exactly like the Sargossa weed met with in the trade region in the North Atlantic; caught a cluster with the log-line, it was fresh, and blooming with apparently young sprouts just formed.

Found no trade until the parallel of 17° S., and then had it on the average from E.S.E., sailed with it 7 days between the meridians of 111° to 113° W., and lost it in lat. 4° N.

May 25.—Winds, first part S.E. by S.; middle S.E.; latter S.S.E.; light breeze and overcast; rain at times; upper strata of clouds passing to the S.W. by the moon; heavy clouds all round the horizon; lat. 4° 8′ N. long. 112° 17′ W.; var. by Azimuth 7° E., bar. 29·60, ther. 78°, water 80°.

May 26.—Light baffling airs and calm; rain at times; latter part S.S.W.; current N. 0·3 mile per hour; lat. 5° 31′ N., long. 112° W.

May 27.—Light baffling airs from the westward; no observation; lat. 6° 34′ N., long. 112° W.

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May 28.—Wind, W. to N.W. and back to W.N.W.; light breeze, thunder, lightning and heavy rains throughout; lat. 7° 42′ N., long. 111° 29′ W.

May 29.—Baffling airs; middle and latter parts from W.S.W.; occasionally heavy squalls; torrents of rain; a water spout passed close ahead; lat. 9° 25′ N., long. 111° 29′ W.

May 30.—Wind W. to N.W.; same weather, no thunder; lat. 11° 6′ N., long. 110° 53′ W., bar. steady, no current during the last 4 days.

May 31.—Wind N.W. and N.W. by N.; moderate; squally at times, with rain; North Star and Southern Cross visible; lat. 12° 59′ N., long. 109° 39′ W.; current N.W. by W. $\frac{1}{3}$ of a mile per hour; no appearance of the Trade.

June 1.—Wind N.W. by N.; unsteady breeze; passing clouds; lat. 14° 42′ N., long. 107° 49′ W.

Within the zone of the N.E. Trade, viz. from 12° to 28° N., had the wind from N. to N.N.W., with the exception of a few hours from N.N.E.; in fact to lat. 33° N. we had nothing but N. and N.N.W. winds, being then in long. 143° W.; from thence very light winds from N.E. to N.W., most part from the north, with fine weather; in lat. 38° N., long. 131° W., we fell in with a fine N.N.W. breeze, which brought us to our destination on the 3rd day of July, after a passage of 158 days.

TOTAL LOSS OF THE BRITISH SHIP "RODNEY," AND DUTCH BARK "OLIVIER VAN NOORD," IN TORRES STRAITS.

I beg to send you an account of the loss of the English ship *Rodney*, of London, and the Dutch bark *Olivier Van Noord*, both of which went on shore on Kenn's Reef, lat. 21° 9′ S., long. 155° 48′ E., at 4.30 on the morning of the 7th of June, the particulars of which are as follows:—

The British ships *Rodney*, *Sea Park*, and *Northumbrian* left Melbourne together on the 22nd of May, intending to keep company through Torres Straits, all bound to India. On the 6th inst., we were joined by the Dutch barque, which expressed a wish to keep company with us through this dangerous passage. All four ships hoisted their longitute at noon of that day, which corresponded to a mile. The course to be steered during the night was then agreed to by all.

When I went to bed at 10 p.m., the *Rodney* was the headmost ship, *Northumbrian* a little on her starboard quarter, *Sea Park* right astern, and the Dutchman astern of us; all went on as usual till 4·30 in the morning, when I was awoke by the ship being brought to the wind. I jumped on deck immediately, and saw what I supposed

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was the *Rodney* firing blue lights and rockets as fast as possible. We all felt certain that something must be the matter, but could see no danger. The Dutchman passed under our stern as we rounded to, continuing the same course. After looking most anxiously to leeward for some minutes with opera glasses, I saw a faint line of broken water not a mile off, on our lee beam. Not knowing which way the reef might run, the ship's head was very prudently kept to the south and west until day broke, when the wind freshened very considerably. We then discovered two vessels on the reef—the Dutchman on her beam ends, with her decks to the sea, which was making a clean breach over her; her position was indeed a most awful one; the other, about a quarter of a mile to the eastward of the Dutchman, proved to be the Rodney, which was comparatively in an upright position, but the rollers, which were increasing every moment, and broke upon her weather beam, sending the sea high over her lower yards, lifting her for the time, and causing her to lurch again to seaward, showed every instant to be most precious, as there was no knowing how long she might hold together. The *Northumbrian* was hove to about two miles to the S.E. of them, rendering every assistance in her power. The *Sea Park* was immediately put about to go down to them, but the current was so strong that she could not weather the reef, which compelled us to make a tack off before we could get near to them. Our quarter-boats were all ready for lowering, being efficiently equipped with grapnels, life buoys, small lines, &c., the crews sitting in them all ready to lower themselves down by Clifford's patent apparatus. About 8 a.m. they pulled off, but had not proceeded more than half way when they were met by Captain Bissett, in one of his own boats, pulling towards us. The utmost anxiety was now depicted on every countenance; but as they neared us he stood up, waved his hand, and said "All saved!" No one who has not experienced it can know the relief conveyed by those two words.

The instant the danger was perceived on board the *Rodney*, Captain Bissett ordered blue lights and rockets to be fired without intermission; this precaution on his part was, in all probability, the means of preventing the other two ships meeting with a similar fate to his own; the Dutch barque did not understand what the signals meant and stood on.

The *Rodney's* crew behaved with the greatest order and coolness, great credit being due to Captain Bissett for the successful manner in which he got his boats lowered, and all his men into them, without the slightest accident, in so heavy a surf. The *Northumbrian* lowered her boats immediately upon rounding to, going first to the *Rodney*, where they were hailed by Captain Bissett (who was then getting the last of his own people out of the ship) to go to the Dutchman. By this time the tide had ebbed considerably, the breakers becoming more violent every minute, and the ship commencing to fall over similar to the barque. Having saved their own lives the *Rodney's* men then went to render any assistance they could to the other wreck. The *North-*

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umbrian's large boat succeeded in getting close under the Dutchman's quarter, where all the crew had taken refuge, having lost all their boats in endeavouring to launch them, the others lying off ready in case of an accident, during which the *Rodney's* lifeboat, in charge of Mr. Richmond, chief officer, was thrown right upon the reef by a tremendous roller, capsizing all the crew out of her, bruising some of them very much, and filling her with water. They, however, succeeded in launching her to leeward of the Dutchman, and with great difficulty got alongside and relieved the *Northumbrian's* boat, which was overcrowded, having all the Dutch crew on board of her.

The *Northumbrian* took the Dutch crew on board, the *Sea Park* taking the *Rodney's*. At noon the *Rodney* fell over on her beam ends, similar to the Dutchman, the mainmast, mizenmast, and foretopmast going over the side.

The course steered should have taken us 15 miles to the eastward of the reef, without allowing for any current which had set us to the eastward 20 miles per day for the two previous days; it must therefore have changed westward, which, indeed, we experienced so forcibly when standing towards the wrecks.

The reef is laid down on the charts very much smaller than it really is. From the view I had of it from aloft, I consider that it extends from 20 to 25 miles from S.W. to N.E., and shoal water to leeward of it about seven miles.

The *Rodney* and *Sea Park* were fitted with Forest's life-boats and Clifford's patent lowering apparatus, both of which proved most efficient. The Dutchman, as I have already shown, lost all his boats, and had not other ships been in company, all his hands would most assuredly have perished, the sea being alive with sharks.

About a mile to the westward of where these two ships went on shore, we observed the wreck of another large vessel, which had been there apparently some months. The anxious inquirer naturally exclaims—"What ship was it? I wonder if her crew were saved?" The probabiiity is, they were all lost and the ship never more heard of. What cares the owner? She was most likely insured—and after a certain time the policy paid; but were is the crew who perished in that man's service? The chances are a hundred to one that she had neither life-boats nor Clifford's patent on board. Neither would the *Rodney* nor *Sea Park* have had them, had they not taken emigrants out from England.

The shipowners of Great Britain are in many instances very charitable, subscribing largely to sailors' homes, chapels, schools, &c., but are very loth to adopt improvements on board their ships, which would often be the means of saving life. Emigrants, troops, and passengers have some protection, for Commissioners are appointed to go on board and see that boats are properly fitted, and plenty of them. Why, I ask, have not sailors the same protection? Is it that their lives are considered of less value than other people's?

It is through the press alone that the public of the present day get their grievances redressed. I hope, then, Sir, you will pay a visit

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to our docks, and see for yourself if my statements are not correct. An article on the subject from your able pen will always carry much further weight with it than anything that could be written by

Ship *Sea Park*, at sea, June 8. A SAILOR.

[*** The above Narrative was furnished to the *Times*, and as it contains several remarks worthy of the consideration of shipowners and seafaring men, we insert it in the pages of the *Magazine*.]

HARBOUR REGULATIONS FOR HAVRE.

With the view of preventing accidents to vessels entering the port of Havre, the Captain of the port has established the following:—

While the National Flag is not hoisted, or while another Flag is flying instead of it, ships should not approach the port without being able to stand off it again when necessary.

The following Signals will be made at the Flagstaff on the northern pier for the entrance and departure of vessels of the Transatlantic Company and Ships of the State:—

No. 1.—*A red flag.*—To enter the port is impossible.

No. 2.—*A blue pennant.* / *A red flag.* } Sailing ships of all kinds, and small steamers are not to enter. Large ships and steamers of the Transatlantic Company may enter.

No. 3.—*Red flag.* / *Blue pennant.* } No ships of any kind are to enter, nor are any ships to go out, the entrance being blocked up.

No. 4.—*Blue pennant.* / *Blue pennant.* } The officers of the port not to go out, nor to make any movements whatever.

HAVRE, 18*th June* 1858, BOURNICEAU.

WATER-SPOUTS IN THE INDIAN OCEAN.

SIR,—Enclosed I send you a sketch of a whirlwind which was encountered by the ship *Forerunner*, October 18th, 1857, in lat. 37° 44′ S. long. 30° 32′ E., on the passage to Bombay,.

I have frequently seen water-spouts and whirlwinds in the course of my life, but never having encountered anything equal to those of this day, I send you an account of them.

They occurred about 9 a.m. We had observed, previously, heavy masses of clouds to the N. and N.E., but there did not seem to be any indications of wind until the formation of the first spout, which bore about N.E. from the vessel: we wore ship to the westward and it passed us, travelling to the S.E. at about 2 or 3 miles distance; a second one formed immediately afterwards, which likewise passed

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astern, gradually diminishing in size: we wore ship again, to the eastward, when a third one formed, on our port quarter, at not more than 500 yards distance, there being no previous indications of it, but a slight break in the clouds overhead; it passed immediately over the ship, and though it had only just formed, its force was terrific. Its passage over the vessel being almost instantaneous it was impossible to follow the changes of the wind during its passage, but it commenced on the port quarter, or from N. or N.N.W., and left us at about S.W. The last one did not increase in size after passing us: but gradually died away to the S.E.; slight, however, as it was, in comparison with the other, its force would have been quite sufficient to have dismasted us if we had any canvas on the ship.

The rough sketch which accompanies this is in general appearance very like the first water-spout we saw.

The height of the foam which constituted the lower part of the spout appeared to me to be about 50 feet high.

I am, &c.,

B. FLETCHER,

Chief Mate Ship *Forerunner*.

To the Editor of the *Mer. Mar. Magazine*,

26th July 1858.

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THE TREATY WITH CHINA.

The following is a summary of the Treaty between Her Majesty and the Emperor of China, signed at Tien-sin, June 26:—

Art. I.—Confirms the Treaty of Nankin of 1842, and abrogates the Supplementary Treaty and General Regulations of Trade.

Art. II.—Provides for the Appointment of Ambassadors, Ministers, or other Diplomatic Agents on the part of either country at the Courts of Pekin and St. James.

Art. III.—Contains provisions for the permanent establishment of a British Minister, his family, and suite, at Pekin, and the forms to be observed in his communications with the Imperial Government.

Art. IV.—Makes arrangements for the travelling and the transmission of the correspondence of the Minister, and the employment by him of special couriers.

Art. V.—The Emperor of China consents to nominate one of the Secretaries of State, or some high officer, to transact business with the British Minister, either personally or in writing, on a footing of perfect equality.

Art. VI.—The same privileges are to be granted to the Chinese Minister in London.

Art. VII.—Consuls may be appointed in China, and may reside in any of the open ports, and their official rank and position as regards the Chinese local authorities is determined.

Art. VIII.—The Christian religion as professed by Protestants or Roman Catholics to be tolerated, and its professors protected.

Art. IX.—British subjects to travel for pleasure or trade into all parts of the interior, with passports from their Consuls, countersigned by the local authorities. The regulations as regards these passports are determined. The provisions of the article not to be applied to ship's crews, for the due restraint of whom regulations are to be drawn up by the Consul and the local authorities. No pass to be given to Nankin, or cities in the hands of the rebels.

Art. X.—British merchant ships are to be allowed to trade up the great River (Yang-tse), but in the present disturbed state of the Upper and Lower Valley no port is to be opened for trade with the exception of Chin Kiang, which is to be opened in a year from the signature of the treaty. When peace is restored British vessels are to be admitted to trade at such ports as far as Hankow, not exceeding three in number, as the British Minister, after consulting with the Chinese Secretary of State, shall determine.

Art. XI.—In addition to the present ports, New Chwang, Tang Chow, Tai Wan (Formosa), Chow Chow (Swatow), and Kiung-Chow (Hainan), are to be opened, and the right of residence and holding landed property is conceded.

Art. XII.—British subjects are to make agreements for landed property at the rates prevailing among the people.

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Art. XIII.—No restrictions to be placed on the employment by British subjects of Chinese subjects in any lawful capacity.

Art. XIV.—The hire of boats for transport of goods or passengers to be settled between the parties themselves, without the interference of the Chinese Government. The number of the boats not to be limited, and no monopoly allowed. If any smuggling takes place, the offender to be punished according to law.

Art. XV.—All questions in regard to rights of property or person between British subjects, to be subject to the jurisdiction of the British authorities.

Art. XVI.—Chinese subjects guilty of any criminal act towards British subjects to be arrested, and punished by the Chinese authorities according to the law of China; British subjects committing any crime in China to be tried and punished by the Consul, or other public functionary, according to the laws of Great Britain.

Art. XVII. Determines the mode of procedure in the matter of complaints on the side either of British or Chinese subjects.

Art. XVIII. Provides for the protection of the persons and property of British subjects.

Art. XIX.—If any British merchant vessel in Chinese waters is plundered by robbers or pirates, the Chinese authorities are to use every endeavour to capture and punish the offenders, and to recover the stolen property.

Art. XX.—Wrecked or stranded vessels, or vessels under stress of weather, are to be afforded relief and security in any Chinese port, and the crews are to be furnished by the Chinese, if necessary, with the means of conveyance to the nearest consular station.

Art. XXI.—Chinese criminals taking refuge in Hongkong, or on board of British ships, shall, upon the requisition of the Chinese authorities, be given up; the same also if taking refuge in the houses or on board the vessels of British subjects at the open ports.

Art. XXII.—The Chinese authorities to do their utmost to arrest Chinese subjects failing to discharge their debts to British subjects, or fraudulently absconding, and to enforce recovery of the debts. The British authorities to do likewise as regards British subjects indebted to Chinese.

Art. XXIII.—Debts incurred by the Chinese at Hongkong must be recovered in the courts of justice on the spot. If the debtor should abscond, and should possess real or personal property in the Chinese territory, the Chinese authorities, in concert with the British Consul, are to see justice done between the parties.

Art. XXIV.—British subjects shall pay on all merchandise imported or exported the duties prescribed by the tariff, but in no case shall they pay other or higher duties than the subjects of other foreign nations pay.

Art. XXV.—Import duties to be considered payable on the landing of the goods, and duties of export on the shipment of the same.

Art. XXVI.—The tariff fixed by Article X. of the Treaty of Nankin, to be revised by a commission of British and Chinese officers,

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to meet at Shanghai, so that the revised tariff may come into operation immediately after the ratification of the treaty.

Art. XXVII.—Either contracting party may demand a further revision of the tariff, and of the commercial articles of the treaty at the end of ten years; but six months' notice must be given, or the tariff is to remain in force for ten years more, and so at the end of each successive ten years.

Art. XXVIII.—It is agreed that, within four months of the signature of the treaty, the Chinese Collector of Duties at ports already opened and hereafter to be opened to British trade, shall be obliged, on application of the Consul, to declare the amount of duties leviable on produce between the place of production and the port of shipment, and upon imports between the consular port in question and the inland markets named by the Consul; and a notification thereof shall be published in English and Chinese. British subjects may, however, clear their goods of all transit duties by payment of a single charge; the amount of the charge to be calculated as near as possible at the rate of 2½ per cent. *ad valorem* duty, and it is to be fixed for each article at the conference to be held at Shanghai.

The payment of transit dues by commutation is in no way to affect the tariff duties on imports or exports, which will continue to be levied separately and in full.

Art. XXIX.—Regulates the amount of Tonnage dues. British merchant vessels of more than 150 tons burden, to pay at the rate of four mace per ton; if of 150 tons and under, at the rate of one mace per ton,

Vessels engaged in the coasting trade, or clearing for Hongkong from any of the open ports, shall be entitled to a special certificate, exempting them from all further payment of tonnage dues in any open port of China for a period of four months from the date of her port clearance.

Art. XXX.—The master of any British merchant vessel may, within forty-eight hours after his arrival, but not later, depart without breaking bulk; in which case he will not be subject to pay tonnage dues. No other fees or charges upon entry or departure shall be levied.

Art. XXXI.—No tonnage dues to be paid on passenger boats, or boats conveying baggage, letters, articles of provision, or other articles not subject to duty. All cargo boats, however, conveying merchandise subject to duty, shall pay tonnage dues once in six months, at the rate of four mace per register ton.

Art. XXXII.—The Consuls and Superintendents of Customs to consult together respecting the erection of buoys and lightships as occasion may demand.

Art. XXXIII.—Duties to be paid to the authorized Chinese bankers, either in Syce or in foreign money, according to the assay made at Canton, July 13, 1843.

Art. XXXIV.—Sets of standard weights and measures to be delivered by the Superintendent of Customs to the Consul at each port, to secure uniformity.

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Art. XXXV. British merchant vessels to be at liberty to engage pilots to take them into any of the open ports, and to convey them out, after they have discharged all legal dues and duties.

Art. XXXVI.—The Superintendent of Customs shall depute one or more Customs' officers to guard a British merchant ship on arriving off one of the open ports. They shall stay either in a boat of their own or on board ship; their food and expenses shall be supplied from the Custom-house, and they shall be entitled to no fees from the master or consignee.

Art. XXXVII. Ships' papers, bills of lading, &c., to be lodged in the hands of the Consul 24 hours after arrival, and full particulars of the vessel to be reported to the Superintendent of Customs within a further period of 24 hours; omission to comply with this rule within 48 hours punishable by a fine of 50 taels for each day's delay. The total amount of penalty not to exceed 200 taels. The master responsible for the correctness of the manifest; a false manifest subjects the master to a fine of 500 taels; but he will be allowed to correct any mistake within 24 hours, without incurring a penalty.

Art. XXXVIII.—If the master shall begin to discharge any goods without the permit from the Superintendent of Customs he shall be fined 500 taels, and the goods discharged shall be confiscated wholly.

Art. XXXIX.—British merchants must apply to the Superintendent of Customs for a special permit to land or ship cargo. Cargo landed or shipped without such permit will be liable to confiscation.

Art. XL.—No trans-shipment from one vessel to another can be made without special permission, under pain of confiscation of the goods trans-shipped.

Art. XLI.—The Superintendent of Customs shall give a port clearence when all dues and duties have been paid, and the Consul shall then return the ship's papers.

Art. XLII.—If the British merchant cannot agree with the Chinese officer in fixing a value on goods subject to an *ad valorem* duty, each party shall call in two or three merchants, and the highest price at which any of the merchants would purchase them shall be assumed to be the value of the goods.

Art. XLIII.—Provides that duties shall be charged upon the net weight of each article, making a deduction for the tare weight of congee, &c., and regulates the manner in which the tare on any articles such as tea shall be fixed. The British merchant may appeal to his Consul within 24 hours.

Art. XLIV.—Upon all damaged goods a fair reduction of duty shall be allowed, proportionate to their deterioration. If any disputes arise, they shall be settled in the manner pointed out in the clause of this treaty having reference to articles which pay duty *ad valorem*.

Art. XLV.—British merchants who have imported merchandise into an open port and paid duty may reimport their goods under certain regulations, without payment of additional duty.

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British merchants desiring to re-export duty-paid imports to a foreign country to be entitled, under similar regulations, to a drawback certificate, which is to be a valid tender in payment of Customs' duties.

Foreign grain brought into a Chinese port in a British ship, if no part has been landed, may be re-exported without hindrance.

Art. XLVI.—The Chinese authorities at the ports to adopt the means they may judge most proper to prevent the revenue suffering from fraud or smuggling.

Art. XLVII.—British merchant vessels not to resort to other than the ports declared open; not unlawfully to enter ports, or to carry on clandestine trade along the coasts. Vessels violating this provision to be, with their cargoes, subject to confiscation by the Chinese Governement.

Art. XLVIII.—If a British merchant vessel be concerned in smuggling, the goods to be subject to confiscation by the Chinese authorities, and the ship may be prohibited from trading further, and sent away as soon as her accounts shall have been adjusted.

Art. XLIX.—All penalties or confiscations under the treaty to belong and be appropriated to the public service of the Chinese Government.

Art. L.—All official communications addressed by British Diplomatic or Consular agents to the Chinese authorities, are henceforth to be written in English. For the present, they will be accompanied by a Chinese version, but it is understood, that in case of there being any difference of meaning between the English and Chinese text, the English Government will hold the sense expressed in the English text to be the correct sense. This provision is to apply to the present treaty, the Chinese text of which has been carefully corrected by the English original.

Art. LI.—The character "I" ("barbarian") not to be applied to the British Government, or to British subjects, in any Chinese official document issued by the Chinese authorities.

Art. LII.—British ships of war coming for no hostile purpose, or being engaged in the pursuit of pirates, to be at liberty to visit all the Chinese ports, and to receive every facility for procuring necessaries, or, if required, for making repairs. The commanders of such ships to hold intercourse with the Chinese authorities, on terms of equality and courtesy.

Art. LIII.—The contracting parties agree to concert measures for the suppression of piracy.

Art. LIV.—Confirms all advantages secured to the British Government by previous treaties, and stipulates that the British Government shall participate in any advantages which may be granted by the Emperor of China to any other nation.

Art. LV.—The conditions affecting indemnity for expenses incurred, and loss sustained, in the matter of the Canton question, to be included in a separate Article, which shall be in every respect of equal validity with other Articles of the treaty.

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Art. LVI.—Ratifications to be exchanged within a-year after the day of signature.

Separate Article provides, that a sum of 2,000,000 taels, on account of the losses sustained by British subjects through the misconduct of Chinese authorities at Canton, and a further sum of 2,000,000 taels on account of the expenses of the war, shall be paid to the British Representative in China by the authorities of the Kwang Tung province.

The arrangements for effecting these payments to be determined by the British Representative in concert with the Chinese authorities at Kwang Tung.

The British forces are not to be withdrawn from Canton until the above amounts are discharged in full.

THE QUARANTINE SYSTEM.

The chief Professor of Public Health, at Laputa, founded his renown and his privileges upon his famous "Pills against Earthquakes," and Swift imagined, no doubt, that in this conception he had contrived to reach the *ne plus ultra* of absurdity. Fiction, however, even in this case is beaten by truth, for the system of "lazarettos against plague" far surpasses the nostrum of our ingenious storyteller. The Laputa pills at any rate were not calculated to do harm, and if they would not exactly save a man from being swallowed up alive, they would not attract the very shock they were warranted to prevent. This is far more than can be said for the Quarantine System, and as the example is still fresh, though the alarm has somewhat subsided, it would be a pity that the public should lose so instructive a lesson.

This summer the plague broke out at Bengazi, a port of no great note on the north coast of Africa. There was no doubt about the character of the disease; it was genuine plague, and as we are told, of a bad type. The theory of Quarantine assumes that a malady of this kind can be brought by sea from one port to another, and, therefore, in order that it may be ascertained whether any vessel coming from the infected place does or does not carry the disorder with her, she is put into "Quarantine" for a certain number of days, her passengers being confined in a separate building, styled a lazaretto, or lazar-house, and her cargo being impounded in like manner. At the expiration of a given period, if no disease appears, the interdict is taken off and communication permitted. One of the most edifying features of this practice is the compulsion it carries with it. It is of no use for any port to stand out against the system, or even to venture on relaxing it, for any dissent, or latitudinarianism, in this respect, is followed by the consignment of the nonconformist to the same fate as the original sinner. As soon as it was known that Bengazi was infected, every other Mediterranean port was compelled to put Bengazi vessels into Quarantine, under pain of being considered

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as infected also. It was not enough to affirm that the community in question was perfectly and absolutely healthy. Unless it could be shewn, in addition to this, that no communication had been held with another community which was reputed unhealthy, both communities were pronounced unhealthy alike.

Accordingly, after the appearance of the plague at Bengazi, our Maltese authorities announced the orthodoxy of their practice by issuing circulars declaratory of their proceedings, and describing the precautions which they elaborately ordained according to proper scale and measure. All this, however, was of no use. Perhaps the profession of faith might have satisfied the Inquisitors, but a terrible mishap had occurred by which all the Maltese defences were turned and demolished in the twinkling of an eye. A vessel called the *Pactolus* arrived at Alexandria from Malta, with 250 Mussulman pilgrims on board, who were going to Beyrout. One of these unhappy creatures died, and, as the doctors declared, from the plague, though his end, when the case was examined, seemed about as natural as possible. On this the Alexandrian Board of Health rose energetically in arms, and, in order to preserve Alexandria from the risk of plague, they adopted the measures following:—They took these 250 pilgrims and crammed them all together into a small building, without ventilation, without wholesome food, and without any appliances by which ordinary health might be maintained. Let it be remembered what these poor creatures *were* to start with. Devotees have seldom been the most cleanly of mortals in any age, and it may be supposed what was the condition of 250 Arab paupers proceeding without a penny in their pockets on a pilgrimage of months. If the plague could have been created in Egypt by human agency, the Egyptian doctors must have produced it out of their cunning ingredients of famine, misery, and suffocation under an African sun. As it happened, the manufacture was beyond their power. Nature this time stood the strain, and as a cannon intended for a couple of pounds of powder is thought safe after being tested with five times the charge, these unhappy pilgrims, after resisting the utmost tension of medical destructiveness without dying under it, were allowed to depart.

Not so, however, did the case finish for the two communities. Malta was infected, for a man held to be infected had come from Malta, or passed by Malta. Alexandria was infected, for the infected man had arrived there. All this while everybody in Malta and everybody in Alexandria was every bit as well as usual; the *Pactolus* went on, and arrived at Beyrout, with every soul healthy, and nobody, except the Board of Health, believed, or pretended to believe, that she had ever had the plague aboard at all. And as days went on, and time was given for any conceivable outbreak or disclosure, the plain fact was confirmed, that no places upon earth could by possibility be more healthy than those two which were afraid of each other, and which were frightening all other places to boot. But to no one of these considerations do Quarantine authorities give heed. They had got a "case;" at least, they said they had, and it seemed really not

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unlikely that the death of an old Moor on a long voyage might have dislocated the communications between England and India for months together. We owe it, perhaps, to what is styled the imperfect civilization of Ottoman institutions, that this agreeable result did not actually occur. The Turks, partly, perhaps, from fatalism, partly from indifference, and partly from general aversion to over-government, have no particular affection for Quarantine laws, and when, therefore, the Sublime Porte conveyed an intimation to the Viceroy of Egypt that the farce might be terminated, Said Pasha acted on the warrant with right good will. Yet even then it needed an English Consul and an English Post Captain to bring the matter to issue. The Board of Health was unconvinced, refractory, and rebellious, but Consul Green sent a short message to the *Vulture*, then under Quarantine in Egyptian waters, and Captain Campbell presently settled the affair by hauling down his yellow flag, and establishing free communication with the shore.

The beauty of this example will not be appreciated, unless we look carefully at the successive stages of the proceeding. Alexandria was "compromised" through Malta; Malta through the pilgrim ship *Pactolus*—that is to say, it was supposed and inferred that, because the *Pactolus* had the plague, Malta had the plague, and because Malta had the plague, Alexandria must have caught it. The simple lapse of week after week showed that there was no base whatever to this pyramid of inferences, every single assumption having been contradicted by actual facts. The *Pactolus* was so free from plague, that the Board of Health could not breed it among its passengers, notwithstanding every effort to that effect. Malta was so free, that not a case nor a sickening has been heard of there; and Alexandria is so free, that it knows no more of plague than we do in London. But all this goes for nothing. The Quarantine system soars above such evidence, and, having once got a hold on the matter, takes as long to make a clean port as the Pope does to make a saint. But can it be owing to a system like this that the extension of epidemics is escaped? We ask any well-informed or reasoning man—contagionist or non-contagionist, whether, if the passengers of the *Pactolus* had really been infected with plague, any measures could have been adopted more likely to intensify and propagate it than those which were employed to keep it from spreading? It would be hard, perhaps, to eradicate all prejudices on this subject, but experience has unquestionably proved that disease can be generated at home with infinitely greater certainty than it can be imported from abroad. The great plague of London was brought, it is said, in a cargo of rags from the Levant; but we still receive cargoes of rags from the Levant, and yet we never get the plague. The simple truth is, that the plague had been ravaging England, on and off, for twenty years or more, just like the cholera in our own days, which has once or twice become violently epidemic, but which has almost yearly shown itself in some activity, either at one place or another. It is high time that these absurd and mischievous institutions were exchanged for usages more consistent with common sense.

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We ought to know by this time the true preservatives against pestilence. We cannot shut out the Destroying Angel by artificial barriers, but we can turn aside the force of his sword by the measures of cleanliness and care, which Providence has placed at our command.—*Times*

OFFICIAL REPORT ON THE LOSS OF THE AMERICAN SHIP "ABBY LANGDON."

The following is the Report of the Magistrates and Nautical Assessor as to the cause of the stranding of the American Ship *Abby Langdon*, in Compton Bay, Isle of Wight :—

My Lords—We have the honour to report to your Lordships that, in pursuance of your Lordships' directions, we have, under the provisions of the Merchant Shipping Act, 1854, and with the assistance of Captain W. H. Walker, Nautical Assessor, inquired into the circumstances attending the stranding of the ship *Abby Langdon*, on the night of the 12th of August last, in Compton Bay, in the Isle of Wight, and as to the conduct pursued by various parties with the view of getting her off, and the failure of all efforts to do so. The *Abby Langdon* was an American ship, commanded by James Baker Hall, and built in 1854 in the State of Maine. She had a registered American tonnage of 1035, coresponding with 997 British. She was laden with rice, from Akyab for Antwerp, *via* Falmouth, for orders. She appears to have cost $64,000, and to have had £5,000 expended upon her in coppering her since she was built. The owner and representative of seven-sixteenths had insured so much of her as that proportion represented of $45,000 for the whole at Lloyd's, but whether any other portion was insured has not appeared in evidence. Her cargo was worth £8000, and her freight was estimated at £5,287. The *Abby Langdon* touched at Falmouth on the 4th August, and sailed thence for Antwerp on the 8th, none of her cargo having been discharged. The Start, about 15 miles distant, was seen on the evening of the 10th. The wind was easterly when the *Abby Langdon* left Falmouth, and generally continued so, but was light and variable, and the ship beat nearly all the way up the Channel, excepting when a light breeze from the northward sprung up off the Eddystone. The land was seen from the time she left the Start, until she got on shore. The Captain had no observation, and after leaving the Start, thick weather came on. The course then steered was southerly and easterly. During the two nights and day previously to getting on shore, a dense fog came on, and light airs continued from the eastward, and the Captain attributes his loss to the effect of currents On the 11th, at 8 o'clock in the evening, the Captain took a cast of the lead, and found 35 fathoms, and he states he imagined he was then on the French coast, and was anxious to get on the English side of the Channel, and that he wanted to run into soundings from 25 to 35 fathoms. The Captain says the mate told him he took soundings again at 12 o'clock, midnight, and found 32 fathoms, but the Captain states him to be a man he could not rely upon. No other soundings appear to have been taken till the ship was aground, and then 20 feet was given. Then and during the previous night the weather was calm, but thick, and the ship, up to the time of getting on shore, scarcely going through the water. The ship was steered East or E. by S., hoping to sight the land at sunrise. The Captain turned in at 10; was called

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at 12, and weather reported calm and thick, and at 4 he went on deck, found the same weather to continue, and hearing a noise, at first taken for a steamer, but afterwards proving to be the surf, found the ship on shore, between 4 and 5 o'clock on the morning of the 12th August, in Compton Bay, in the Isle of Wight, with 20 feet of water round her, (about her own draught), the tide being quarter flood. The Captain ported his helm, ordered every thing to be backed, ran out his kedge astern, but the ship was immoveable. No attempt was made to lighten the ship; no cargo was thrown overboard. There appears to have been no boat in the ship sufficient to run out a large anchor. The Coastguard men came on board about 8 o'clock, offered their services, which were accepted, and they appear to have done all in their power, and to have acted on the requisition, and in cordial co-operation with the Captain. They also procured a large boat, and ran out the bower anchor. The Lieutenant of the Coastguard (Lieutenant Goold) came on board about 12 o'clock, and directed his men, actively aiding the Captain, and placing the anchor in what they conceived to be the best position. No attempt was made to lighten the ship, the Captain having an undue amount of confidence that the ship would come off this tide. Every other effort appears to have been made. There were 23 of the crew of the ship, and 12 of the Coastguard. Finding all attempts useless, a boat was sent to the telegraph station, and a tug obtained from Southampton, for a renewed effort the next tide, but the ship gradually drew to the land, and was finally abandoned. Lieutenant Goold appears to have told the Captain his position, and of his being Deputy Receiver of Wrecks, and when Mr. Bright (Lloyd's Agent) came on board, and also two other persons of the same name (Pilots), after the Coastguard had charge, and offered their services, they were told by the Captain they were not then required. The Captain told Lloyd's local agent, Mr. Bright, that had he been there sooner, he would have had charge; but then it was not necessary to interfere with Lieutenant Goold and his men. It is to be regretted, that language so wholly unbecoming a person filling the office of local agent to Lloyd's (and to which we beg to refer your Lordships), should have been used by Mr. Bright, and we submit, whether the attention of Mr. Bright's principals should not be called to it. We are, therefore, of opinion, that the cause of the *Abby Langdon* going on shore on the morning of the 12th of August was, in consequence of sufficient care not being taken to get continual soundings previously to the time of her stranding, and which were rendered the more necessary, in consequence of the thick state of the weather. That after the ship was on shore, she might have been hove off, if she had had a boat capable of carrying out her bower anchor astern, and if her cargo had in due time, in part, or wholly, been thrown overboard, and the ship thereby lightened. That the Coastguard appear to have used all the efforts in their power to save the ship, consistent with the means at their disposal. That, taking into account the great value of co-operation between the Coastguard Service and Lloyd's local agents, we cannot too emphatically deprecate any impropriety of conduct, or intemperance of language, that may tend to frustrate so desirable an object as saving life and property on such occasions.

We have the honour to be, my Lords,
Your Lordship's obedient servants,
EDMOND B. TINLING
J. R. ENGLEDUE,
Justices of the Peace of the Borough and County of the Town of Southampton.

I approve of this Report—W. H. WALKER.

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NAUTICAL NOTES.

Yachts :—Very few but those who have looked into the subject have any idea of the aggregate number and tonnage of yachts owned in the ports of the United Kingdom, and yet it is desirable that the number and character of these British-owned pleasure-vessels should be known. If we examine the official authority for this class of vessels, the "Universal Yacht List," for the present year, we find that there are about 1,200 yachts registered as belonging to the different yacht clubs, comprising vessels ranging from 5 or 6 tons up to vessels of from 300 to 500 tons. The aggregate tonnage of these British yachts may be taken at 33,000 tons. Of the seamen they employ we have no details. Out of the 1,200 craft standing on the books of the different yacht clubs, there are about 70 exceeding 100 tons. There are 22 different yacht clubs, the chief station being Cowes, in the Isle of Wight.

Hospital for Sick Seamen in the Levant :—By an Order in Council which recites the powers given by Acts of Parliament to levy dues on British and Ionian vessels entering ports of the Levant, to provide for the establishment, support, and maintenance of British hospitals for sick seamen coming in British or Ionian vessels, within the dominions of the Sublime Ottoman Porte, the tonnage of 1d per ton having been found insufficient for the support of such hospitals, the increase of the duty to 1½d per ton upon all such vessels is authorized.

A Buoy to Record Disasters at Sea :—At the Meeting of the British Association, Mr. James Oldham, C. E., Hull, read a paper elucidatory of a buoy, called "Gresham Buoy," which was intended to record disasters at sea. During the last 15 years ending with 1857, there were wrecked, burnt, or missing 8998 sailing vessels, and 175 steam vessels, giving a total of 9,173 vessels or an average of 611 ships per annum. In 1857 there were 37,014 British registered vessels, of which 662 were lost, or at the rate of 1·78 per cent. To remedy, in some measure, the dreadful suspense into which multitudes are thrown, by ships missing, a gentleman, Mr. Gresham, proposed that every vessel should be provided with one or more copper buoys, bearing her name and the port to which she belongs; that these buoys should also have an Admiralty mark, and a Board of Trade number, and that each should be provided with a chamber, with a small spring valve made to open outwards, and capable of resisting any pressure, which should be used for receiving letters, or even treasure, so that if the ship were lost, the buoy would float off in safety, and the information it contained would be communicated to the parties interested by any ship which might pick it up. The buoy was intended to be made of strong copper, painted in bright red and white stripes, and to be fitted with a small bell and flag on the upper part.

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Alteration of Port Dues at Gibraltar:—The *Gibraltar Chronicle* publishes an Order in Council from the Queen, dated the 5th of June, altering the port dues payable on vessels arriving at Gibraltar, which, in future, will be levied according to the subjoined schedule:—

	Spanish Dollars.		
For every vessel from 1 to 20 tons inclusive ..	2	0	0
For every vessel from 21 — 50 tons inclusive ..	3	0	0
For every vessel from 51 — 100 tons inclusive ..	4	0	0
For every vessel from 101 — 150 tons inclusive ..	6	0	0
For every vessel from 151 — 200 tons inclusive ..	7	0	0
For every vessel from 201 — 250 tons inclusive ..	8	0	0
For every vessel from 251 — 300 tons inclusive ..	9	0	0
For every vessel from 301 — 400 tons inclusive ..	10	0	0
For every vessel from 401 — 500 tons inclusive ..	11	0	0
For every vessel from 501 — 600 tons inclusive ..	12	0	0
For every vessel from 601 — 800 tons inclusive ..	13	0	0
For every vessel from 801 and upwards ..	14	0	0
(N.B. The engine room of steamers is not included in the tonnage.)			
And in addition to each of the foregoing rates, a further duty when the ship or vessel is liable to quarantine, of	2	0	0
For every day's attendance by a health guard when embarked	1	0	0
For every visit by a health guard to a vessel in quarantine	0	6	0
For every day's attendance by a health guard in superintending the discharge of a vessel in quarantine	2	0	0
For every bill of health	1	0	0
For every endorsement on a bill of health	1	0	0

The Meteorological Department of the Board of Trade:—A Report from Admiral R. Fitzroy, chief of this department of the Government, has been published. It is dated the 22nd of June 1858. It states that better wind and current charts, for all parts of the world, for each month of the year, and for considerably smaller spaces of ocean, are much required. Much information has been recently collected from various seas, from many foreign stations on land, and from the Pacific and Atlantic oceans. By very numerous trials the specific gravity of nearly all the oceanic surface has been ascertained, and it is believed that these results will render further observations of the kind unnecessary, except in peculiar and limited localities, for some special object. The total pressure of the barometer varies so little throughout the year within certain limits of latitude near the equator, or rather at about 5° N. latitude in the Atlantic, that, allowing for the six-hourly change, any ship crossing that part

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of the sea may actually compare her barometer with a natural standard, invariable within those small limits of 2-100ths to 3-100ths of an inch. Hygrometric inquiries are steadily, though slowly, proceeding. Magnetism has not occupied much thought, because it is zealously attended to in other departments of the Government. The report rather gives a general idea of what is being done than the actual results of the labours of the department.

REWARDS AND TESTIMONIALS.

Capt. Robert M'Elhago, of the *Utopia*, of Glasgow, has received the thanks of the Netherlands Government, for his gallant conduct in saving the lives of the Master and Crew of the Dutch schooner *Roelfina Gerardina*. Subjoined is Captain M'Elhago's account of the circumstances attending the rescue of the Crew of the vessel:—"While prosecuting a voyage between Lainaca, in the Island of Cyprus, and Clyde, on the 27th of June last, and while in a gale of wind in lat. 41° 8′ N., long. 14° 12′ W. (about 220 miles S.W. of Lisbon), lying head reaching, under close-reefed stormsails, about 5 p.m. we observed a vessel bearing down on us with a flag of distress flying. On the schooner nearing us we hailed her, when the Master told us that his vessel was sinking, and asked to be taken on board. I told him to put out his boat, and I would pick him up, but he replied that his boat was stove. I then told him to wear round, and I would follow him. He did so, and I wore the Utopia, as my jolly-boat was on the port side (which was the weather side). I then got the jolly-boat lowered, and called for volunteers. The mate, Charles Sherwood, and two hands, James Richardson and Mark Bradley, volunteered to go in the boat. They made two trips, at the risk of their lives, in a very high sea, and succeeded in bringing off the whole crew of the Dutch vessel, six in number, three each trip. The gale still continued, and we were obliged, on the 5th of July, to bear up for Lisbon, as our provisions and water had run short. On arriving there we landed the crew of the Dutch vessel, and then proceeded on our voyage."

At the meeting of the Local Marine Board of the Port of London, Mr. Duncan Dunbar in the chair, **Captain Thomas S. Scott**, (No. of Certificate 108, first-class), of the ship *Herefordshire*, of London, attended to receive a very handsome Testimonial, the gift of the President of the United States, in acknowledgment of the services Captain Scott rendered to the passengers and crew of the American ship *John Gilpin*. The presentation consisted of a very massive Silver Breakfast Service, enclosed in a handsome mahogany box.

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The Chairman, in presenting the Testimonial to Captain Scott, read the following letter, which had been received by the Earl of Malmesbury, the Foreign Secretary, from Mr. Dallas, the American Minister :—

"The undersigned, &c., has the honour to transmit herewith to the Earl of Malmesbury, &c., a Service of Plate, forwarded to him from the United States, and which the President has specially directed may be presented to Captain Thomas S. Scott, of the British ship *Herefordshire*, of London. This gift has its foundation in the following facts. On the 30th of January last, the American ship *John Gilpin*, of Boston, having encountered storms of great violence, was reduced to a sinking condition, with a wind blowing hard from the south-west, and a heavy sea running. She was discovered in this desperate plight by the *Herefordshire*, whose gallant and humane officers, notwithstanding the raging of the elements, proceeded to her immediate relief. Captain Scott, with promptitude and noble-heartedness, removed from the wreck to his own ship 15 passengers and 30 seamen, including the master and officers of the *John Gilpin*, and treated them, while taking them to Bahia, with a kindness and generosity for which their gratitude was loudly and unanimously expressed. Struck by this admirable conduct towards their distressed countrymen, the American Government cannot withhold the tribute of their acknowledgment. They request your Lordship, therefore, to receive the accompanying Service of Plate, and to cause the same to be delivered, in the name of the President of the United States, to Captain Thomas S. Scott, as a testimonial of the high appreciation with which his bravery and humanity have been regarded.

"The undersigned begs the Earl of Malmesbury to accept the renewed assurance of his highest consideration."

"G. M. DALLAS."

"Legation of the United States, London, September 4, 1858."

Captain Henry Tillman (No. of Certificate 545), of the ship *Nimroud*, of London, was presented with a handsome Telescope, awarded by the Board of Trade, for his kind treatment of 52 of the passengers and crew of the ship *Joseph Somes*, whom he took off the Island of Tristan d'Acunha, after the destruction of the ship *Joseph Somes* by fire.

The Chairman said it afforded the Board much gratification to present Captain Tillman with a Testimonial for such gallant and humane services.

It is the intention of the Board of Trade to bestow some gifts upon the inhabitants of the Island of Tristan d'Acunha.

Rewards for saving life at sea, have also recently been awarded by the Board of Trade to the following persons, viz. :—

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To **Captain Pascoe**, of the French Schooner *Jeune Marie*, a Telescope, and £2 each for the 7 persons forming her crew, by way of recognising their services to the crew of the shipwrecked barque *John Campbell*, who were ultimately landed in safety at Brest.

To **George Grigor**, a seaman belonging to Peel, a Silver Medal and £10, for his promptitude, daring intrepidity, and gallant conduct, exhibited on the 24th July last, when the *Duke of Richmond* was driven on a ledge of rocks off the Isle of Man by the violence of the gale, when, at the imminent peril of his own life, he swam through the surf on two occasions to the spot, and rescued two of the seamen, the master having been washed off the wreck before assistance could be afforded.

To **Captain Schelling**, of the Bremen Ship *Agnes*, a Telescope, for services rendered to the crew of the *Elizabeth and Sarah*, of Newcastle, which vessel foundered at sea on the 20th June last, when bound for Quebec.

Her Majesty's Government have awarded to **Dominique Garnier Capon**, Shipbuilder, of Fecamp, a Gold Medal, for having, at the risk of his own life, saved the first engineer of the British Steam Ship *L'Empereur*, which vessel was wrecked off Fecamp, on the 9th October 1857.

"To **Captain J. S. Attwood**, of the *Essex*.

"Dear Sir,—We, the undersigned cabin passengers on board the *Essex*, on the successful termination of this our voyage to our native land, cannot separate without giving some slight expression to our feelings of gratitude and respect for the careful and prompt attention on all occasions shown by you to the comfort of all the passengers, often, we fear, to your own inconvenience.

"We may also be allowed to testify to your unceasing watchfulness over the safety of the ship you have in charge; and we feel assured that, if the same amount of care were always displayed on board other vessels, we should seldom hear of disasters at sea.

"With the best wishes for your future welfare and prosperity,

"We remain, yours very truly,

"Chas. Jos. Brown,	Wm. Hargreaves,
Mrs. C. J. Brown,	James Dewhurst,
Edmund Wolfe,	E. Franks,
Mrs. P. Wolfe,	Henry C. Langhorne,
Mrs. Edward Langhorne,	Henry Browne,
Mrs. W. P. White,	W. Schreier,
Mrs. Eustace Maxwell,	C. J. Stevenson."

On board Ship *Essex*, August 20, 1858.

"To **Dr. Miller**, Ship *Essex*.

"We, the undersigned, cabin passengers, beg to return you our hearty thanks for the benefits we have received from you during our passage in this ship. Some of us especially have to thank you for the skill, care, and attention we have received from you, and trust

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you will live long to give to others the same advantages we have received at your hands.

" James Dewhurst,
W. Hargreaves,
Edmund Wolfe and Family,
Mrs. Edward Langhorne, for Self and Family,
Mrs. Eustace Maxwell,
C. J. Stevenson."
C. J. Brown,
Mrs. C. J. Brown,
E. Franks,
Mary White,
H. Schreier,
H. Brown,

August 20, 1858.

" To G. H. Bawn, Esq., Chief Mate of the *Essex*.

" Dear Sir,—We, the undersigned, passengers on board the *Essex*, beg to return you our thanks for many pleasant moments passed with you, which have tended to beguile the tedium of a long voyage, and thank you the more, that we can appreciate the many trials your profession affords; in none of which you have been wanting in the urbanity of a gentleman. Trusting that the next time we meet you may be in command of your own ship, we remain,

" Dear Bawn, yours truly,

" Chas. Jos. Brown,
Mrs. C. Brown,
Edmund Wolfe,
Mrs. P. Wolfe,
Mr. Edward Langhorne,
Mrs. W. P. White,
Mrs. Eustace Maxwell,
Hy. Hargreaves,
James Dewhurst,
E. Franks,
Henry Langhorne,
Chas. J. Stevenson."

On board Ship *Essex*.

CERTIFICATES CANCELLED.

At a meeting of the Local Marine Board for the port of Liverpool, on the 11th September, an investigation was held into the conduct of William Thompson Archer, mate of the *Prince of Wales*, of Liverpool, upon charges of gross and repeated acts of drunkenness preferred against him by Mr. James Mowat, Master of the said ship. The court considering the charges fully proved, and that from his habits of drunkenness he was unfit to perform the duties of master or mate, the Board of Trade have directed that his Certificate of Service, No. 73,682, shall be cancelled.

At a Naval Court, held at the office of the British Consulate, Batavia, on the 13th July 1858, James Barney, chief mate of the *Jeremiah Garnett*, of Liverpool, was tried upon charges of drunkenness preferred against him by the second mate and the rest of the crew, the Master thereof having died at sea. The court being of opinion that the charges of habitual drunkenness, and consequent incapacity to discharge the duties of Master or mate of a British vessel, with due regard to the safety of life and property, had been fully proved, ordered him to be discharged from the ship. The above having been represented to the Board of Trade, their Lordships have directed that the Certificate of Service, No. 36,149, of James Barney shall be cancelled.

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CERTIFICATE SUSPENDED.

At a meeting of the Local Marine Board for the port of Hull, held on the 8th September, an investigation was held into the conduct of Robert Howden, late Master of the steamer *Russian*, of Hull, upon charges of drunkenness and gross acts of misconduct, preferred against him by Messrs. Bailey & Leetham, the owners, the court being of opinion that the charges were fully proved, the Board of Trade have directed that the Certificate of Competency, No. 10,185, of Robert Howden, shall be Suspended.

ROCKS AND SHOALS.

West Indies—Truxillo Bay, Coast of Honduras :— LEOPARD BANK.—Official information has just been received by the Lords Commissioners of the Admiralty, that H. M. Steam Vessel *Leopard* grounded on a sand bank, near Cameron Point, on the evening of the 26th June 1858, while taking up an anchorage in Truxillo Bay. From the bank, Cameron Point bore S. by W.$\frac{1}{2}$W., and Cape Honduras N.E.*

Bearings Magnetic. Var. 8° East in 1858.

* See Admiralty Charts, West Indies, Sheet XIII. Cape Gracias to Belize, No. 1219; and General Chart, Sheet III. No. 392.

CONDENSED LIST OF

CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from August 25th to September 25th, 1858.

England—Entrance to the River Thames—Princes' and Horse Channels :—The Girdler Spit Buoy has been moved to a position midway between the Princes' Channel Light-vessel and the Girdler Beacon, and now lies in 3$\frac{1}{2}$ fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

Chislet Mill open West of George's Farm....S.S.W. $\frac{1}{4}$W.
St. Peter's Church open West of a Mill at the back of Margate.....S.S.E. $\frac{1}{4}$E.
North Tongue Buoy .....S.E. by S.
Girdler Beacon .....N.W. by W.

It is intended in the course of the month of October to make the following changes in the Buoys in the Horse Channel, viz. :

The Gore Patch Buoy will be taken away.

The East last Buoy will be moved about 1$\frac{3}{4}$ miles E. of the

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West last Buoy, by which arrangement the three last Buoys and Margate Hook Beacon, will be separated at equal distances.

A Red Buoy will be placed on the Reculver Sand, which, with Margate Hook Beacon, will form the eastern entrance to the Horse Channel.

Futher notice will be given when the above changes are effected.

England — E. Coasts — Yarmouth Roads — Pakefield Gat and Newcome Sand:—Consequent upon changes having taken place in this Gatway, the following alterations in the lighting and buoying have been made, viz.:—

The Light from Pakefield Lighthouse has been directed in a line S.$\frac{3}{4}$E., between the North Barnard and South Newcome Buoys, and leads in about 16 feet water.

The South Newcome Buoy has been moved to the southward into 15 feet, with the following marks and bearings, viz.:—

Southwold Church Tower, in line with High Water part of Covehithness . . . . . S.W.$\frac{1}{4}$W.

Kessingland Church Tower, its width open North of a Red Brick House, with Slated Roof . . . . . N.W. by W.$\frac{3}{4}$W.

North Barnard Buoy, half-mile distant . . . . . S.W. by S.

Pakefield Lighthouse . . . . . N. by W.

A Spit of Sand having grown up midway between the South Newcome Buoy and that heretofore known as the South-West Newcome, a Buoy, coloured Black, and marked *S. W. Newcome*, has been placed in 3$\frac{1}{2}$ fathoms, with the following marks and bearings, viz.:—

Lowestoft Church Spire, on with the south end of New Terrace . . . . . N. by E.$\frac{3}{4}$E.

Kessingland Church Tower, touching the south end of the Coast-guard Station, and on with the Flagstaff . . . . . W.$\frac{3}{4}$S.

The Buoy heretofore known as the S.W. Newcome is now called the West Newcome.

Bearings Magnetic. Depths of water are those at low water spring tides.

England—E. Coast—Aldbro' Ridge Buoy:—An alteration having taken place in Aldbro' Ridge Sand, the Buoy has been moved about one quarter of a mile to the westward, into 5 fathoms low water spring tides, with the following marks and compass bearings, viz.:—

Orford Church and Castle in line . . . . . W.$\frac{1}{4}$N.

North Mill at Aldbro', in line with a Red Tiled House next West of South Mill N.$\frac{1}{2}$E.

England—E. Coast—Protector Shoal—Lynn Well:—A Spiral Buoy, striped Black and White, and marked with the word

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Protector, has been placed in 4½ fathoms at low water spring tides, three cables' length to the eastward of the shoalest spot on this Sand, with the following marks and compass bearings viz.:—

The Second, from the southward, of Five Clumps of Trees on the High Land in line with Trusthorpe Church ..... W.S.W. westerly
A Grove of Trees in line with West Theddlethorpe Church ..... W.¼N.
South Somercote Church Spire, its apparent length open northward of Two Trees close to the northward of Saltfleet Mill ..... N.W. by W.⅜W.
Donna Nook Beacon ..... N.W.¼W.
Spurn Light Vessel ..... N. by W.½W.
Inner Dowsing Buoy ..... S. by E.½E.

Mediterranean—Coast of Spain—Fixed Light on Cape Cullera:—On and after the 1st of August 1858, a Light would be exhibited from the Lighthouse recently erected on Cape Cullera, in the province of Valencia.

It is a Fixed White Light, illuminating seaward, between the Grao or port of Valencia and Cape San Antonio, or on the bearings North, round westerly to S.S.E.—Elevation, 92 English feet above the level of the sea, and visible from the deck of a vessel in clear weather at a distance of 15 miles.

The Light-tower is round, and rises from a circular building; the whole painted light yellow. It stands on the extremity of the Cape, in lat. 39° 12¼′ N.; long. 0° 13½′ W. of Greenwich.

Bearings magnetic.—Variation 18½° *W. in* 1858.

North Sea—Coast of Holland—Light-Vessel off the North Hinder Bank:—A Light Vessel has been moored in 21 fathoms water, in lat. 51° 36′ 40″ N.; long. 2° 34′ 25″ E. on the eastern side of the North Hinder Bank, and on and after the 23rd August 1858, a Fixed White Light would be exhibited from her mainmast at an elevation of 40 feet above the sea, and visible in clear weather at the distance of about 11 miles.

The Light-Vessel has two masts, and is coloured Red, with the words *Noord-Hinder* painted in large White letters on her sides. During the day a Red Ball will be hoisted at her mainmast head, and in thick foggy weather a Bell will be struck every quarter of an hour, preceded and followed by strokes of a gong.

A Red Buoy has been placed in 14 fathoms water, N.½E. 2 miles from the Light-Vessel, with the word *Hinder* marked on it in White letters. Vessels of large draught are recommended to keep to the *northward* of this Buoy, in order to avoid the shoal patches on the North Hinder.

Bearings magnetic:—*Variation* 20° *W. in* 1858.

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England—E. Coast—Maplin Sand—Beacons for Measured Mile :—Four Beacons, each distinguished by a triangular head, have been erected on the southern edge of the Maplin Sand, within or to the W.N.W. of the Black Can Buoy on the Black Tail Spit, for the purpose of testing the speed of H. M. Steamers; it is therefore requested that mariners in charge of passing vessels will carefully avoid collision with these Beacons, and any person who may be found wilfully injuring them, will be prosecuted as the law directs.

The Beacons are placed on E.$\frac{1}{4}$N. and W.$\frac{1}{4}$S. lines of bearing, a third of a mile apart, and are distant from each other 6085 feet, or one geographical mile. The *eastern* Beacons bear respectively from the Mouse Light-Vessel W.N.W.$\frac{1}{2}$W. 2$\frac{1}{3}$ miles, and W.N.W$\frac{1}{4}$N. 2$\frac{1}{2}$ miles; and the *western* Beacons bear from the Nore Light-Vessel E.N.E.$\frac{3}{4}$E. 4$\frac{1}{4}$ miles, and E.N.E.$\frac{1}{4}$E. 4$\frac{1}{2}$ miles.

Bearings Magnetic.—Variation 21$\frac{1}{2}$° *W. in* 1858.

North Sea—Coast of Holland—Bell-Beacon-Vessel off the Schouwen Bank :—An Iron Bell-Beacon-Vessel has been placed in the position before occupied by a Red Conical Buoy, near the north-east part of Schouwen bank, off Brouwershaven Gat, coast of Holland.

The Beacon Vessel is painted Black, and has one mast, to which is secured a triangular framework, extending fore and aft and athwart, having planks painted alternately Black and White. On a Black plank is the word *Schouwen Bank*, and on one of the White planks, *W. Schouwen, S.E. magnetic.*

A heavy Bell, the sound of which serves as a warning by night, or in foggy weather, is carried between screens at the mast head, at an elevation of 23 feet above the water, and the whole may be seen in clear weather from a distance of 8 miles.

The Beacon-Vessel lies in 14 fathoms at low water, in lat. 51° 47′ N.; long. 3° 27′ E. of Greenwich, with Schouwen Revolving Light bearing S.E. and West Kapelle Light S. by W.$\frac{3}{4}$W.

Bearings Magnetic.—Variaton 20° *W. in* 1858.

Atlantic—Coast of Spain—Fixed Light at Port Cudillero :—On and after the 1st of August 1858, a *Harbour* Light would be exhibited from the Lighthouse recently erected on Rovallera Point, Port Cudillero, in the province of Oviedo, Bay of Biscay.

It is a Fixed White Light.—Elevation, 94 English feet above the level of the sea, and visible in ordinary weather from a distance of 10 miles.

The Lighthouse consists of a rectangular building, with a tower rising from it, the whole being 14 feet high. The rectangular building is coloured White, and the tower and lantern Dark Green. It stands in lat. 43° 36′ 10″ N.; long. 6° 9′ 3″ W. of Greenwich, according to the latest Spanish position given.

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Wales—N. W. Coast—Temporary Lights at Holyhead Old Harbour :—On and after the 6th September 1858, the outer end of the works of a new wooden jetty in course of construction at the entrance of the Old Harbour of Holyhead, will be indicated as they advance by *Two* Red Lights, 20 feet apart, and each 5 feet above the level of the jetty. The work is to be extended in a N.E. direction from the pier-head Lighthouse, and its entire length will be 500 feet.

Atlantic—United States—Fixed Light with Flashes on Sandy Point, Chesapeake Bay :—On and after the 1st of October 1858, a Light will be exhibited from the Lighthouse recently built on Sandy Point, *western* side of Chesapeake Bay, between Greenbury Point Lighthouse, at the entrance to Annapolis Harbour, and the mouth of the Magothy River.

The Light will appear Fixed within the distance of 12 miles in fine weather, from the deck of a coasting vessel; but without or beyond that limit a Brilliant Flash will only be seen every one and a half minutes.

The structure is a brick house, with a lantern on the top painted Red. The Light will be elevated 35 feet above the base of the house, and 50 feet above the mean level of the sea.

Atlantic — United States — Light Vessel off Five Fathom Bank, Delaware Bay :—A New Light-Vessel has been placed to mark the Five Fathom Bank, lying to the *eastward* of Cape May, as a substitute for the old vessel, which has been withdrawn for repairs.

The rig and colour of the new vessel, and the characteristic distinction of the Lights are the same as the old vessel, but her position is in 12 fathoms water to the E.N.E. of the position formerly occupied, and S.E ½S. 2½ miles from the *shoal* part of the Bank. This change, it is believed, will enable vessels coming in from sea, and coasters, to determine, with less difficulty than formerly, the locality of that danger when approaching it from all quarters.

Bearings Magnetic.

Atlantic—United States—Revolving Light on Fire Island Inlet, Long Island :—On and after the 1st November 1858, a Light will be exhibited from the Lighthouse Tower now in course of erection at Fire Island Beach, *east* side of Fire Island Inlet, on the *southern* shore of Long Island, New York.

It will be a White Revolving Light, elevated about 166 feet above the mean level of the sea, and will show a Brilliant Flash once every minute, visible in ordinary weather at the distance of about 22 miles. It will not be materially different in appearance from the present existing Light, except in its increased range and greater brightness of Flash.

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The new Lighthouse Tower, 150 feet in height, is placed N.E. about 200 feet from the old Lighthouse tower, and is built of yellow brick. The old Lighthouse tower and keeper's dwelling will be removed immediately after the exhibition of the new Light. The approximate position of the new Lighthouse tower is in lat. 40° 37′ 53″ N.; long. 73° 12′ 51″ W.

Variation 6° W. in 1858.

England—E. Coast—Harwich Harbour—Beach End, and Inner Ridge Buoys:—The Beach End having extended itself to the N.W., the Buoy has been moved nearly a cable from its former position, and now lies in 3 fathoms at low water spring tides, with the following marks and compass bearings, viz.:—

Shotley West Martello Tower, open west of Harwich Low Lighthouse ..... N.N.W.
South part of Felixstow Cliff, in line with the south part of Languard Beach..... E. by N.½N.
Cliff-foot Buoy..... N.W.½N. (2½ cables)
Andrews Buoy..... S E. by E.

It is intended, during the month of October, to alter the Colour of the Inner Ridge Buoy from White to Red.

Entrance of the Thames—Gunfleet Sand:—During the month of October, an Additional Buoy, painted Red and White in Chequers, to be called the S.W. Gunfleet, will be placed near the Gunfleet Sand, about midway between the Lighthouse and the present S.W. Buoy.

The South West Buoy will then be called the West Gunfleet.

Atlantic—United States—Fixed Light on Billingsgate Island, Cape Cod Bay:—On and after the 1st September 1858, a Light would be exhibited from the Lighthouse recently rebuilt on the east side of Billingsgate Island, at the north side of the entrance to Wellfleet Bay, Massachusetts, and after that period the Stake Light shown on that island would be discontinued.

It is a Fixed White Light, elevated 40 feet above the mean level of the sea, and visible in ordinary weather at a distance of 12 miles.

The Light-tower is square, 30 feet high, and built of brick, and the lantern is painted Black; the dwelling house joining the tower is also built of brick. The approximate position of the tower is in lat. 41° 52′, 22″ N.; long. 70° 3′ 55″ W.

Atlantic—United States—Revolving Light and Fog Bell on Bishop and Clerk Shoal, Nantucket Sound:—On and after the 1st October 1858, a Light will be shown from the Lighthouse recently erected on the Bishop and Clerk Shoal, Nantucket

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Sound, Massachusetts, and on or about that period, the Light-vessel at present moored on that danger will be removed from her station.

It will be a White Revolving Light, elevated 59 feet above the mean sea level, and showing a Bright Face, or Flash, every half-minute, which should be visible in ordinary weather at 14 miles.

The Light-tower, 45¾ feet high, bears S. by E. 2¼ miles from Gammon Point, and is built of grey granite, on a stone cylindrical pier, 12 feet high, erected on the north point of the shoal. The approximate position of the tower is in lat. 41° 34′ 17″ N.; long. 70° 15′ 20″ W.

A Fog Bell, to be rung by machinery, is attached to the Light-house, and will be sounded in thick weather at intervals of fifteen seconds.

Bearings Magnetic. Variation 9° 30′ *West in* 1858.

England—E. Coast—Sunderland Harbour—Alteration of Lights—*North Pier Lighthouse*:—A new and more powerful BRIGHT LIGHT has been substituted for the old reflectors at this Lighthouse. The Light will now appear from sea of much greater brilliancy than formerly, the arc of the horizon illuminated seaward remaining the same. The RED DISTINGUISHING LIGHT below it has also been increased in brilliancy, and now illuminates seaward an arc of the horizon extending from the North Beacon on the North to the South Beacon on the South, or an arc of 144°.

At Sea, the Bright Light is visible a distance of from 14 to 16 miles; and the Red distinguishing Light a distance of from 6 to 8 miles.

South Pier Lighthouse:—The BRIGHT TIDE LIGHT has been increased in brilliancy, and, in the Fairway Track, is now visible a distance of from 4 to 5 miles;—the other Lights and Signals remaining as before.

Scotland—E. Coast—Fraserburgh Bay—Beacon on Cairnbulg Briggs:—A cast-iron Spur Beacon, 28-feet high, and coloured Red, has been erected near the seaward termination of the Reef called Cairnbulg Briggs, forming the south turning point of Fraserburgh Bay.

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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THE

MERCANTILE MARINE MAGAZINE.

NOVEMBER 1858.

PORT OF KAIPARA—NEW ZEALAND.

By Capt. W. Wittleton, of the Barque "Isabella Hamilton."

On the Admiralty Chart, New Zealand, Sheet 2, there is a very good general draft of the Port of Kaipara. It being the largest scale published of this Port, all inaccuracies or omissions ought to be pointed out as soon as known, for the safety of navigation. The changes in the channels to which I propose to refer, were probably not known when the Chart was published and the *Sailing Directions* written. These changes are very important. Several of the channels on the Chart boldly marked out as clear, and referred to in the "New Zealand Coasting Pilot" in the same terms, are nearly filled up, and a *New Channel**, clear, straight, and safe, has lately opened. Mr. Stanaway, the Pilot and Harbour Master, says, "The North Channel is filled up,—the Main Channel has become exceedingly dangerous through its filling up,—the Fanny Channel is doubtful,—the South Channel is improving,—but there is no mistake in the New or Kemp's Channel;" and it is of this Channel I would write.

In making our approach towards the entrance, we ran along the coast to the northward, and before we could make out the formation of the land distinctly, were close to the breakers. The breakers are said to extend 5 or 6 miles seaward, "their whole extent of outer limit being 11 miles, in the form of a crescent, convex to seaward." It being fine weather, and having a fair wind, we sailed along the outer edge of the North Bank, being occasionally drawn in with the flood tide; but having the lead going the whole time, as soon as we found the water shoal, we hauled off into deeper water *immediately*. So soon as we could get the distinctive features of the land visible, we observed the bearings of "three remarkable green patches on the sand hills forming the North Head," and when the central patch of the three bore N.E.½N. (mag), steered right towards it. Now, up to this time, there were nothing but breakers to be seen, which, though a fine day, were evidently of a destructive nature; but as soon as the above bearings were on, a perfectly clear, though narrow, channel appeared

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open, and in our progress through the whole of it, did not strike less than 6½ fathoms. We kept a hold on the North Bank right in, as the soundings on it are regular; whereas, on the other hand, they are abrupt and dangerous; we passed the dreaded Long Shoal, and proceeded leisurely towards Pouto Point, the anchorage where a pilot will generally be waiting, or if not ships will have to wait for the pilot.

The port (when within) is safe and exceedingly commodious, having several large rivers branching off in various directions towards the interior, among the kauri forests, which valuable timber greatly abounds in this district, and large quantities are shipped off occasionally.

Kaipara has had a bad name, and is like an individual labouring under the same misfortune, not easily got clear of. There are a few natural difficulties to contend with there, which are found in most places, but especially in all new countries; they may, however, be readily overcome, if set about in right good earnest. We had to discharge and load in the river Oruawharu, and, with the exception of a tide, at springs and during heavy rains, running 3 to 4 knots, we might have been in a dock: the same cannot be said of the Wairoa, as it is a much longer and more tortuous river, making the tides much stronger in it. We were out of the harbour within seven weeks, and had no small difficulties to contend with.

In our progress out of the harbour, we were favoured with a fair wind; we steered along the land till we approached the old North Channel, over the flood tide, which is most advisable, as, in the event of a calm, or shift of wind, there is the opportunity of getting back to an anchorage again. The green patches, before referred to, are then visible; great attention must be paid to the bearings; and, as before stated, when the central patch bears N.E½N., steer directly opposite, keeping rather towards the North Bank. We were out, all clear, in two hours from starting, having the same water out as we had when entering.

There is a great advantage evident in this new channel,—there is but one course required, after having entered it with a fair wind; also the tides set fair through, and you have an excellent mark in the central patch to guide you; besides, the northern edge is clearly marked by the breakers, towards which it is well to keep. Another and great advantage is, that in leaving, a N.W. wind is a leading wind, two points being allowed for land draught,—therefore all winds from N.N.W. round by East to S.S.E., are good for leaving by this channel.

There is one drawback to a stranger making out the port, that is, the vapour, or haze, constantly hanging over the banks, impeding the view, which no doubt is caused by the commotion of the sea; but the breakers are the best *landmark*, if made to the north of the port. There is plenty of fresh water; fresh provisions and vegetables are also to be obtained at times. Ships about to load timber ought to be well provided with all needful appliances of their own. A

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mooring swivel is an especially useful article. Upon the whole, I think Kaipara may become a much frequented port in time to come, notwithstanding the bad odour in which it is held at present. The opening of the new channel is in lat. 36° 26′ 40″ S., long. 174° 1½′ E. Var. 14¼. E.

* Reference is made to this Channel in the last edition of Admiralty Chart, New Zealand, Sheet 2. A line is drawn across the North Bank at the entrance of Kaipara Harbour, with the following instructions:—

The Barque *Galatea*, in August 1856, passed through a clear and straight channel to sea on this line of bearing, carrying 7 fathoms at high water. } *Middle Green Patch on North Sand Head N.E.½N.*

REMARKS ON THE PASSAGE ROUND THE HORN,

By Capt. W. D.

Enclosed, I transmit extracts from the Log of the brig *Norman*, from the 25th October to the 11th November 1855, when doubling Cape Horn, outward,—and again on returning, from the 25th January to the 2d February 1856. In these interims, the barometer was unusually low at times, while the wind and sea and other appearances were not such as I would have expected from its indications, and I am of opinion, the prevailing low state of the barometer in that vicinity, coupled with strong winds and heavy sea, has brought the place into worse repute (if possible), than it actually deserves. Few have the nerve to keep a press of sail on a ship with a strong gale and low barometer; but from my acquaintance with the route, the heaviest gales are from S.W. with a high barometer. I am aware of the changes of the barometer in different hemispheres, but still for it to stand so high with very *violent* gales, and so low with *ordinary* gales, appears to me rather anomalous; but were this generally known to masters proceeding round Cape Horn, they would be freed from much unnecessary anxiety, and probably be enabled to shorten a passage (tedious and tiresome in general), by carrying sail with a low barometer, at the same time not neglecting to keep a careful look-out for any change. In this instance we passed several vessels, all under sail suitable to the indications of the barometer, while we were carrying wholé courses, jib, and double-reefed topsails, and had the gale increased so suddenly as to have taken masts, sails and all out of us, every one (of these captains) would have said, "served you right; your bar., sir, shewed you what you had to expect," while it appears, that we *have not* to expect the heaviest gales there with a (low) bar., even at 28·20.

On the passage out, 1855:—

6 a.m. bar. 30·00, wind W.N.W.; noon, bar. 29·85, wind W.N.W.

Oct. 25.—Lat 45° 42′ S., long. 56° 42′ W.: fresh breezes, with passing squally showers throughout.

6 p.m. bar. 29·85, wind W. by S.; midnight, bar. 29·80, wind W.

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6 a.m. bar. 29·60, wind west; noon, bar. 29·50, wind W. by S.
Oct. 26.—Lat. 47° 47′ S., long. 59° 1′ W.: moderate and clear, fine weather.
6. p.m. bar. 29·50, wind N.W.; midn. bar. 29·45, wind N.W. by W.

6 a.m. bar. 29·45, wind S.W. by W.; noon, bar. 29·50, wind W. by S.
Oct. 27.—Lat. 49° 17′ S., long. 59° 53′ W.: strong breezes, double reefed, cloudy.
6 p.m. bar. 29·45, wind N.N.W.; midn. bar. 29·40, wind N.N.W.

6 a.m. bar. 29·15, wind N.N.W.; noon, bar. 29·10, wind W.N.W.
Oct. 28.—Lat. 50° 3′ S., long 62° 1′ W.: strong breezes, double reefs, cloudy.
6 p.m. bar. 29·05, wind W.; midnight, bar. 29·10, wind W.S.W.

6 a.m. bar. 28·85, wind W.; noon, bar. 28·80, wind W.S.W.
Oct. 29.—Lat. 51° 53′ S., long. 62° 37′ W.: strong breezes, double reefs, with clear weather.
6 p.m. bar. 28·80, wind W.S.W.; midn. bar. 28·90, wind W. by S.

6 a.m. bar. 28·65, wind W. by S.; noon, bar. 28·80, wind W.
Oct. 30.—Lat. 53° 40′ S., long. 62° 13′ W.: strong breezes, double reefs, cloudy.
6 p.m. bar. 28·90, wind W.; midnight, bar. 28·90, wind W.

6 a.m. bar. 28·80, wind W.; noon, bar, 28.70, wind S.W.
Oct. 31.—Lat. 54° 59′ S., long. 63° 40′ W.: strong squally breezes; off Staten Island.
6 p.m. bar. 29·00, wind S.W.; midnight, bar. 29.20, wind S.W.

6 a.m. bar. 29·35, wind W.S.W.; noon, bar. 29·50, wind W.S.W.
Nov. 1.—Lat. 55° 51′ S., long. 64° 45′ W.: light winds, with heavy sea, and westerly current.
6 p.m. bar. 29·60, wind W.S.W.; midn. bar. 29·70, wind W.S.W.

6 a.m. bar. 29·80, calm; noon, bar. 29·85, wind N.
Nov. 2.—Lat. 56° 33′ S., long. 64° 38′ W.: calm for 2 hours, then light airs from the N. throughout; the Horn Land about 18 miles distant, distinctly visible.
6 p.m. bar. 29·80, wind N.; midnight, bar. 29·75, wind N.N.W.

6 a.m. bar. 29·70, wind N.W.; noon, bar. 29·60, wind W.N.W.
Nov. 3.—Lat. 57° 6′ S., long. 69° 36′ W.: strong double reef breezes; Diego Ramirez bore N.W. 13 miles at 8 a.m.
6 p.m. bar. 29·45, wind W.; midnight, bar. 29·20, wind W.S.W.

6 a.m. bar. 29·10, wind W.N.W.; noon, bar. 28·90, wind N.
Nov. 4.—Lat. 56° 46′ S., long. 68° 53′ W.: strong double reef gales, and squally, with a heavy sea.
6 p.m. bar. 28·70, wind N.N.W.; midnight, bar. 28·60, wind W.

6 a.m. bar. 28·60, wind W.; noon, bar. 28·40, wind W.N.W.
Nov. 5.—Lat. 57° 53′ S. long. 71° 58′ W.: strong gales and squally, with heavy sea.
6 p.m. bar. 28·30, wind W.; midnight, bar. 28·30, wind W.N.W.

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6 a.m. bar. 28·35, wind W.N.W.; noon,bar. 28·45, wind W. by N.
Nov. 6.—Lat. 59° 57′ S., long. 74° 48′ W.: more moderate; made sail; *passed several ships hove to.*
6 p.m. bar. 28·50, wind W.; midnight, bar. 28·60, wind W.

6 a.m. bar. 28·70, wind W.; noon, bar. 28·80, wind W.
Nov. 7.—Lat. 57° 39′ S., long. 73° 45′ W.: strong breezes and cloudy.
6 p.m. bar. 28·90, wind W.; midnight, bar. 28·95, wind W.

6 a.m. bar. 29·05, wind W.; noon, bar 29·20, wind W.
Nov. 8.—Lat. 55° S., long. 73° 18′ W.: latter part strong gales and squally, heavier weather than on the 5th and 6th.
6 p.m. bar.29.40, wind W.; midnight, bar. 29·45, wind S.W.

6 a.m. bar. 29·50, wind S.W.; noon, bar. 29·70, wind W.S.W.
Nov. 9.—Lat. 55° 5′ S., long. 72° W.: strong breezes and clear.
6 p.m. bar. 29·88, wind W.; midnight, bar. 29·90, wind W.S.W.

6 a.m. bar, 29·70, wind W.S.W.; noon, bar. 29.70, wind S.W.
Nov. 10.—Lat. 56° 5′ S., long. 73° 30′ W.: fresh breezes and cloudy.
6 p.m. bar. 29·85, wind S.S.W.; midnight, bar. 29.90, wind S.S.W.

6 a.m. bar. 29·95, wind S.S.W.; noon, bar. 30.00, wind S.W.
Nov. 11.—Lat. 54° 27′ S., long. 76° 1′ W.: fine and fair.
6 p.m. bar. 30·05, wind S.W.; midnight, bar. 30.05, wind S.W.

On the homeward passage, 1856:—

6 a.m. bar. 29.50, wind N.N.W.; noon, bar. 29·45, wind N.N.W.
Jan. 25.—Lat. 56° 48′ S., long. 75° 22′ W.: strong breezes and cloudy; latter part rain.
6 p.m. bar. 29·45, wind N.N.W.; midnight, bar. 29·45, wind N.

6 a.m. bar. 29·45, wind N.N.W.; noon, bar. 29·40, wind N.N.W.
Jan. 26.—Lat. 56° 59′ S., long. 73° 8′ W.: strong breezes and squally.
6 p.m. bar. 29·30, wind N.N.W.; midn. bar. 29·20, wind W.N.W.

6 a.m. bar. 29·10, wind N.W.; noon, bar. 29·00, wind N.N.W.
Jan. 27.—Lat. 56° S., long. 69° 35′ W.; strong gales, with heavy squalls.
6 p.m. bar. 28·80, wind N.; midnight, bar. 28·50, wind N.N.E.

6 a.m. bar. 28·40, wind N.N.E.; noon, bar. 28·55, wind N.
Jan. 28.—Lat. 57° 2′ S., long. 62° 58′ W.; strong gales and squally.
6 p.m. bar. 28·45, wind N.W.; midnight, bar. 28·50, wind W.N.W.

6 a.m. bar. 28·65, wind W.N.W.; noon, bar. 28·80, wind W.N.W.
Jan. 29.—Lat. 56° 5′ S., long. 58° 29′ W.; strong gales and squally.
6 p.m. bar. 29·00, wind W.; midnight, bar. 29·20, wind W.

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6 a.m. bar. 29·40, wind W.N.W.; noon, bar. 29.60, wind N.
Jan. 30.—Lat. 54° 12′ S., long. 53° 14′ W.; first part light; and
and latter, strong gales.
6 p.m. bar. 29·60, wind N.N.E.; midnight, bar. 29·50, wind N.N.E.

6 a.m. bar. 29·40, wind E.N.E; noon, bar. 29.40, calm.
Jan. 31.—Lat. 52° 13′ S., long. 50° 25′ W.; strong breezes
throughout
6 p.m. bar. 29.60, wind W.S.W.; midnight, bar. 29.65, wind S.W.

6 a.m. bar. 29·70, wind S.W.; noon, bar. 30·00, wind S.W.
Feb. 1.—Lat. 50° 11′ S., long. 49° 46′ W.; fresh.
6 p.m. bar. 30·20, wind S.W.; midnight, bar. 30·30, wind S.W.

6 a m. bar. 30·30, wind S.W.; noon, bar. 30·30, wind N.W. and calm.
Feb. 2.—Lat. 48° 59′ S., long. 48° 18′ W.; changeable.
6 p.m. bar. 30·30, wind N.N.W.; midn. bar. 30·30, wind N.W. by N.

In the "Sailing Directions for South America," Part II, by Captains King & Fitzroy, at page 251, it is stated that "with the "wind N.W. or Northerly, the mercury is low; if it falls to 29 or "28·30, a S.W. gale may be expected, but it does not commence "until the column has ceased to descend [why?]. It frequently, "however, falls without being followed by this change. In the "month of June 1828, at Port Famine, the barometer fell to 28·17 "and afterwards gradually rose to 30·5, which was followed by "cold weather &c."

It is by no means an uncommon thing to find Captains expressing distrust of their barometer on the passage round the Horn. When for years they have been in the habit of relying on its every indication, in temperate and tropical regions, and find themselves in the vicinity of the Horn for the first time, and the barometer rising or falling without any apparent change of weather, or perhaps rising to a gale, or falling to fine weather, their confidence is rudely shaken, and they, in a few voyages, begin to regard the barometer as *no safe and sure guide* in those parts of the ocean. But navigators must always bear in mind, that if these anomalies are not understood *now*, it is only by carefully registering all the phenomena, and by helping to furnish an accumulation of *data*, that, eventually, service can be rendered at once to navigation and to science: and, to use the words of the "Report of the Meteorological Department of the Board of Trade" (1857):—

"With reference to regions or districts of increased or diminished *mean annual* pressure, it is known that in certain districts in the temperate and polar zones, such as in the vicinity of Cape Horn extending into the antarctic polar ocean, and in the vicinity of Iceland, the mean annual barometric pressure is *considerably* less than the average pressure on the surface of the globe generally; and that anomalous differences, also of considerable amount, exist in the mean pressure in different parts of the arctic ocean. These all require special attention, with a view to obtain a more perfect knowledge of

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the facts, in regard to their amount, geographical extension, and variation with the change of seasons, as well as to the elucidation of their causes."

SIGNALS OF DISTRESS AT SEA.

[The attention of Owners and Captains is called to the following letter which lately appeared in the *Shipping Gazette*. Similar complaints have been made before from the East Coast of England, and it is absolutely necessary that a practice so reprehensible as that of using the Signals commonly known as those of *Distress at Sea*, for the purpose of merely telegraphing the whereabouts of a vessel, be discontinued, before it ends in its natural result a "Dreadful catastrophe and loss of life at Sea."]

SIR—The undersigned are most anxious, through the medium of the public Press, to draw the attention of the proper authorities (query, Board of Trade ?) to the exceedingly injudicious, if not suicidal, practice, adopted by vessels in the Liverpool and American trade particularly, of firing guns, sending up rockets, burning blue lights, &c. when passing Holyhead, and which are often mistaken for signals of distress. There are generally ten steam vessels employed between this port and Dublin, whose sailings to and from are four each way daily, and often five. We need scarcely dwell on the fact, that all steam and other vessels are liable to accidents, when prompt assistance may be required to prevent loss of life and property. Every precaution, we believe, is taken in this port to render such assistance in case of need; but how is it possible to distinguish between the vessel in distress, and the one which makes precisely the same signals, it appears to us without end or aim, as it cannot be readily known by the colour of rockets and blue lights, and the sound of guns, what vessel may be passing. But by a well-arranged system of lights, private signals could be made between the South and North Stacks, masked in every direction but the land side, and on no account exhibited before or after passing the positions named. These signals would not only be capable of showing the name of the vessel, but would be vastly less expensive, and be deprived of the alarming tendency of the present system, which appears to us to be uncertain in its operation for the object aimed at, viz. to show that any particular vessel has passed this port, which is, we presume, the reason why they are made. In the day time they can show their numbers.

No less than three instances have occurred within the last ten days of the practice complained of, causing great alarm here, and a steam vessel was dispatched in a southerly direction to ascertain if assistance was required. One vessel making these signals turned out to be the screw steamer *Vigo*, on the 13th instant; another, on the 15th, the Pasha of Egypt's new yacht, in charge of Englishmen. Some time since a steamer was prepared and boats sent out, which remained a whole night, on seeing similar signals made.

If the law is not sufficiently strong to prevent this most dangerous practice, we would appeal to the good sense of the Commanders

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of vessels to desist from a custom so fraught with danger. Some of them may in their youth have read "Æsop's Fables," and will probably remember that of "The Wolf." When the wolf actually came no one heeded. Such may be the unhappy case with some of those gentlemen who now cry "Wolf!" when there is none near.

We are, Sir, your obedient servants,

W. H. WARREN, Commanding *Telegraph*,
J. J. PRIEST, Commanding *Hibernia*,
J. A. BEAUMONT, Commanding *Cambria*.
G. TAYLOR, Commanding *Hercules*.
LUKE MARTIN, Commanding *Sea Nymph*.
E. KEANE, Lieut. R.N., Commanding R.M.P. *Llewellyn*.
R. WILLIAMS, Commanding R.M.P. *Prince Arthur*
W. WILLIAMS, Commanding R.M.P. *St. Columba*.

HOLYHEAD, *October* 20, 1858.

THE SHIPPING INTEREST.

At a meeting of the Committee of the General Shipowners' Society, specially convened to take into consideration the present alarming depression of the Shipping Interest, and to determine on the measures to be adopted in relation thereto, the following Resolutions were agreed upon, and are being sent to the various Shipowners' Societies at the several outports:—

"That the British Shipping Interest is at present, in all its most important branches, in a state of deplorable and ruinous depression, and it is unquestionable that this depression has been partly produced, and is greatly aggravated, by the severe competition to which British Navigation is now exposed with the Shipping of Foreign countries."

"That by the 324th clause of the 16 and 17 Victoria, cap. 107, "passed in the year 1853, it is enacted—

"That if it shall be made to appear to her Majesty, that British "vessels are subject in any foreign country to any prohibitions or re- "strictions as to the voyages in which they may engage, or as to the "articles which they may import into or export from such country, it "shall be lawful for her Majesty (if she think fit), by Order in Council, "to impose such prohibitions or restrictions upon the ships of such "foreign country, either as to the voyages in which they may engage, "or as to the articles which they may import into, or export from, any "port of the United Kingdom, or of any British possessions in any part "of the world, as her Majesty may think fit, so as to place the ships of "such country on as nearly as possible the same footing in British ports "as that on which British ships are placed in the ports of such country."

"That after the experience of the five years which have elapsed since the passing of the said Act, it is found that the universal admission of Foreign shipping to the privileges of British ships has not induced the governments of many Foreign States to admit British Shipping to equality of privileges with their own ships in the trade of those countries; but that British Navigation is in many cases impeded by prohibitions re-

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strictions, and regulations, which are opposed to the reciprocity contemplated when the British Navigation Laws were repealed.

"That, under these circumstances, it is the opinion of this Committee, that the time has arrived when the strongest appeal from those who are interested in British Shipping should be made to her Majesty, to exercise the powers vested in her by the foregoing Act, for "placing the "ships of those countries on as nearly as possible the same footing in "British ports as that on which British ships are placed in the ports of "such country."

"That for the purpose of giving effect to such appeal, it is, in the judgment of this Committee, expedient that a public meeting should be held in London, for the adoption of a suitable address to the Crown, and for inviting the co-operation of the Shipping Interest throughout the United Kingdom in furtherance of this object."

SEASON OF HURRICANES OR CYCLONES.

The following general observations on hurricanes are furnished from Dové's "Law of Storms":—

"So far as regards the season when these storms may be more "particularly expected in the different parts of the torrid zone, it "may be said, in general terms, that they occur at that annual pe-"riod when the sun is in the zenith, and attain their maximum at "the close of that period; therefore in the West Indies and in the "China Sea they take place in September; in the Southern Indian "Ocean and at the Mauritius in February and March; whilst in "the Bay of Bengal they seem to take place with the greatest fre-"quency, in the months when the monsoons change, namely, in May "and October. This is evident from the following record of Storms "as given in Piddington's "Horn Book," p. 260:—

"From a record of one hundred and twenty-three years in the WEST INDIES, there occurred during the year—in June, 1; July, 2; August, 13; Sept., 10; Oct., 7.

"From a record of fifty-nine years in the WEST INDIES, there occurred during the year—in June, 1; July, 5; August, 13; Sept., 13; Oct., 9.

"From a record of sixty-four years in the CHINA SEA, there occurred during the year—in June, 2; July, 5; August, 5; Sept., 18; Oct., 10; Nov., 6.

"From a record of forty-six years in the BAY OF BENGAL, there occurred during the year—in Jan., 1; March, 1; April, 1; May, 7; June, 3; August, 1; Oct., 7; Nov., 6; Dec., 3.

"From a record of thirty-nine years in the SOUTHERN INDIAN OCEAN, there occurred during the year—in Jan., 9; Feb, 13; March, 10; April, 8; May, 4; Sept., 1; Oct., 1; Nov., 4; Dec., 3.

"From a record of twenty-four years at the MAURITIUS, there occurred during the year—in Jan., 9; Feb., 15; March, 15; April, 8; Dec., 6.

"Tornadoes and thunder-storms occur in the torrid zone in "each hemisphere during the period when the sun is above it, conse-"quently they are prevalent during our summer in the northern, and "during our winter in the southern hemisphere. Hurricanes also

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" partake of the nature of thunder-storms, *i. e.* they are accompanied " by a great amount of precipitation and loud electric explosions. " The aspect of the sky when a whirlwind-storm is approaching is " characterized by the towering up of clouds which rapidly vary their " forms, and often by the appearance, in the distance, of a bank of " clouds of extraordinary blackness.

" With reference to the undulations of the waves;—during a " whirlwind storm they proceed from the centre in such directions " that the farther they are from it the less is their radial difference; " thus their course is from the centre of the vortex to its circumfe- " rence, in a direction somewhat inclined forwards in that of the gy- " ration, and to which Reid's attention has been particularly called; " consequently the three descriptions of storms differ in the following " manner; namely:—

" 1. In a whirlwind storm the waves undulate in a direction which, the farther they are from the vortex, is more nearly at right angles with the direction of the wind.

" 2. In a heavy gale they proceed in the same direction as the wind itself.

" 3. In a gale which arrests the progress of a wind blowing from the opposite quarter. (Seamen then say that two winds are fighting with each other)."

Dové's concluding observations on these phenomena are worthy of note:—Hurricanes endeavour to outstrip the earth in the velocity of its rotation, whilst the constant trade wind strives to maintain its course without interruption. The predominating equatorial and consequently westerly direction in the temperate zone, the south-west monsoon of the northern Indian Ocean, and the north-west monsoon of the southern, unite with hurricanes in forming the elements of compensation for the preservation of that unchangeable rotatory velocity which the influential trade wind might otherwise interfere with. Notwithstanding their destructive effects, they are, therefore, in a general sense, a conservative principle in the complete organism of the earth.

I must now call attention to the unjustifiable manner in which it has been sought to confound the phenomena of the law of gyration with the whirling motion of storms, and which indeed some persons still endeavour to mix up together. The disavowal of the existence of whirlwind storms by many natural philosophers has arisen altogether from the fact that the partisans of the cyclone theory have considered a whirlwind to exist in cases when it is only the rotation of the earth which manifests itself in the deflection of the vane; and weak points have consequently been exposed, the discovery of which was not difficult. Respecting the apparent weakness of definition in such points however—while Nature, on the other hand, speaks to us so clearly and energetically as she does in typhoons and West India hurricanes—it would be closing one's eyes wilfully, not to apprehend the problem which is laid before us; namely, to endeavour to understand such language, however much it may vary in its mode of expression.

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SHIPPING OF THE PORT OF LONDON.

It is both curious and instructive to take a retrospective glance at the mutations and variable features of the several branches of the Shipping Trade employed at the Port of London during the past century, and to notice how some have risen into immense importance, while others have retrograded, been abandoned, or become transferred to other Ports. For instance, the Whaling business was at one period prosecuted with great vigour by London Merchants. In 1800, there were twenty-one vessels of 6,451 tons dispatched from the Thames to the Northern Fisheries, and twenty of 6,586 tons to the Southern Fisheries. But this trade gradually declined until, a quarter of a century ago, it was given up here altogether. Liverpool and London Merchants and Shipowners have abandoned the pursuit to the Northern Ports of the kingdom, and even there the Merchants prosecute it less vigorously, until it has passed chiefly into the hands of the Americans. An examination of the figures of the Shipping Trade centering in the Port of London shows, incontrovertibly, how rapid and extensive has been the increase of the foreign tonnage employed here; for, while in 1820 it only formed one-fifth of the whole tonnage, in 1855 half the tonnage employed was foreign bottoms. Indeed, out of the whole tonnage entries of the kingdom last year, nearly one-half was foreign Shipping. Surveying the special interests at this Port we find that the East India and China Trade has always centred in London,—although Liverpool, Glasgow, and a few other Ports, now share in it. In 1820 the entries inwards into London from places eastward of the Cape consisted of but 121 vessels, of 76,161 tons; in 1830, of 217 ships, of 108,219 tons; in 1855 they amounted to 593 ships and 359,125 tons. But another important trade has been added since then to the Shipping Interest, the Australian Trade, which, although not exclusively centering in London, occupies a large amount of Shipping, and the entries in 1855, just cited, include the Australian Shipping.

The trade with foreign countries conducted from the Thames engaged, in 1835, 1,008 ships, and 181,196 tons; in 1855, 7872 ships entered, measuring 1,735,525 tons. The trade with Central and Southern America, which in 1835 gave employment to 83 ships of 16,037 tons for London, in 1855 employed 351 ships of the aggregate tonnage of 165,804 tons. In 1835 our Colonial possesions, including the Channel Islands, kept 1,440 vessels, measuring 357,404 tons, going to London; but, in 1855, such strides had our Colonial Trade made, and so rapidly have the Colonies themselves advanced in population and production, and in the demand for interchange of commodities, that 1,898 ships, registering 685,061 tons, were employed, the tonnage having thus nearly doubled. The trade with North America, which chiefly centres in Liverpool, is, however, also shared by London, and has increased here in the following

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ratio:—In 1835, 82 ships and 32,128 tons entered at London from the United States; and in 1855, 158 ships and 129,911 tons. From our North American Colonies the entries were, in 1855, only 145 ships and 78,393 tons; but in 1835 they were 274 ships and 87,929 tons. The West India Trade also forms an important item in the shipping entries in the Docks. In 1835 the entries consisted of 393 ships and 113,421 tons; in 1855 they were 400 ships and 120,652 tons. The Irish and Coasting Trade forms a large branch of the Commerce of this Port, and its progress is marked by the following figures:—The entries were, in 1820, 10,676 ships; in 1830, 11,316 vessels of 918,049 tons; in 1840, 11,643 ships and 932,757 tons; in 1855, 19,040 ships and 2,852,223 tons. The Emigration and Passenger Trade at this Port is very considerable, but there are no readily accessible *data* to show its extent.

We may also take a glance at the proportion of the trade carried on by steamers, which are necessarily rendered subservient to the numerous wants of a great metropolis with 3,000,000 of inhabitants. In 1830 there were 361 steam vessels, of 73,634 tons, employed in the trade with the Port, including their repeated voyages, and of these 185 were employed in the Coasting Trade. In 1835 there were 1076 steam vessels, measuring 266,684 tons, and of these 699 were employed in the Coasting Trade. In 1855 there were 297 steamers, registering 75,464 tons, which entered the river from Foreign Ports and the Colonies, and 1298 steamers, of 411,549 tons, which entered coastwise, making a total of 1595 entries and 487,013 tons. Such are the fluctuations or progress in the different branches of the Shipping Trade conducted from the port of London to various quarters of the world.—*Mitchell's Maritime Register*.

WATERSPOUTS.

In our last Number (p. 296–7), we gave an account, accompanied with a Woodcut, of a series of Waterspouts encountered by the *Forerunner*, in the Southern Indian Ocean; and in reply to several communications inquiring into the character of these meteorological phenomena, which have at all times been a source of great anxiety to the navigator, we give the following extract from a paper read at the Meeting of the British Association, 1855, by Dr. Taylor, of Glasgow, who has examined the subject theoretically and experimentally. His solution appears to be the best hitherto published:—

"Although some theories of the waterspout, more or less plausible, have been proposed, yet I believe it may be correctly stated that no attempt has been made from any of them to account for all the phenomena, far less to give anything like a rigid analysis or experimental proof. The theory which seems most eligible is that which supposes the cause of the appearance of the spout to be a whirl-

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wind, produced most probably as is seen on the small scale in dust eddies, or dimples in a stream of water. But the difficulty comes to be felt in the details. What is the tube or spout? What force projects it downward and again draws it up? If it be the superincumbent pressure forcing down a portion of air and cloud into the rarified space in the interior of the rotating column, how does this account for the strange appearance frequently seen, of four or even more snake-like tubes descending close together? Is it possible to suppose each to have a separate whirl round it? This cannot be, as the opposite currents when they join would destroy each other. Again, the columns or spouts are frequently seen to have a regular coiling motion like a living snake, and also to dilate and collapse like the drinking throat of an animal. I adopt the theory that the phenomenon is one of rotation, and subject the matter to calculation, thus:—1st. Is it possible that the spout can be a real vacuum as some have supposed? If so, the rotatory motion must be great enough to generate at its exterior limits sufficient centrifugal pressure to sustain the whole force of the atmosphere. Suppose then that we have a line of particles rotating in a horizontal plane round its one end as a centre, as at C, (*See* fig. 1.) then w being the angular velocity, $r\,w$ will be the absolute velocity of any particle whose distance from C is r, and its centrifugal force is $\frac{r^2\,w^2}{r}$ or $r\,w^2$. Then the outward force at D being due to the accumulation of the efforts of the whole line of particles, we have $F = \int w^2\,r\,d\,r = \frac{w^2\,1}{2} + C$, and if we take the diameter of the tube or non-rotating part to be inconsiderable, C will be $= 0 + F = \frac{w^2 1^2}{2}$ where r now signifies the outer limit of the revolving line of particles; but $v = r\,w$, so $\frac{v^2}{2} = F$, and this centrifugal force acting on the exterior particle is to be, in the case of a vacuum being left at C, equal to the whole accumulative force of gravity, which if H be the height of a uniform atmosphere, will be $H\,\varrho$, where ϱ is the force of gravity; so $\frac{V^2}{2} = H\,\varrho$, or $V^2 = 2\,H\,\varrho$, or $V = \sqrt{2\varrho H}$, which is also the velocity which a body could acquire by falling freely from the height H. So we see that the exterior boundary of the revolving plate of air would require to have a velocity altogether incredible and utterly incompatible with the comparatively harmless nature of waterspouts—twenty-five miles per minute, while the most violent hurricane has only a speed of from one to two miles per minute. Ships have passed through waterspouts with only the loss of a sail or two. But, indeed, it is evident that, unless the whirl extended to the upper limits of the atmosphere, it is utterly impossible that a vacuum could subsist, even were the

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rotatory velocity of the surrounding air great enough. If the phenomenon be one produced by rotation there can be only a slight degree of rarefaction in these spouts, far less can they be empty tubes as is often supposed.—Again, suppose rotation only gentle in degree, we can see that the tendency will be for the air which lies immediately above and below the axis of motion to be thrust like two cones into its interior, and the problem now for solution is as follows:—(*See* figs. 2 & 3). Taking the air above, and supposing it specifically lighter, and therefore it will have a tendency to remain up, unless pushed down, and to return again when the pushing force ceases; if such a column be depressed into the interior of a mass of denser air (supposing it to have as great elasticity) it will be pushed up with a force equal to the difference between its own weight and the weight of an equivalent column of the exterior air. If h be the height of these columns, and d the density of the lighter or internal one, that of the external being unity, we have the pressures to each other as h to hd and the difference between them will be $h - hd$ or $h(1 - d)$ and this is the pressure which the centrifugal force of the revolving air must sustain, as it is that with which the depressed column tends to rise. That the centrifugal force may be equal to this, we must have $v = \sqrt{2 g h (1 - d)}$. Suppose a not unlikely case, that the height of the descended column of the spout is 400 feet, and that the density of the stratum of air and cloud composing it is ·99, while the external air at the average height is 1, then the velocity of rotation necessary to retain it depressed, or to depress it, is got by the form $v = \sqrt{64 \times 400 \times .01}$ = 16 feet per second, which is the extreme velocity requisite at the part of the revolving column farthest from the spout. Seeing that this view of the matter gives a very moderate speed as sufficient for the depression of cloudy shreds down into the interior of the revolving air, I resolved to submit the supposition to experiment. I take a glass box (*see* fig. 4) supported on a wooden tray and suspended by a long twisted string. The glass plates composing the sides of the box are about eighteen inches square, and are not closely joined at the corners, but leave long narrow slits, as represented. The cover is of glass and has a circular hole in it of two inches or more in diameter. A piece of burning nitrated paper is dropped into the interior, and produces a white smoke, which, when it cools, is somewhat heavier than the air. A thin, loose, stratum of cotton wool is now placed on the upper opening to prevent external agitation from disturbing the atmosphere within, and at the same time to allow free admission for the air. The whole is now set into rotation, and almost immediately the dark column of the external atmosphere begins to descend in a beautiful conical form, like a black finger, and exactly resembling the waterspout. It, before long, passes completely to the bottom, if the rotation be quick enough, after which, as the speed slackens, the column is again drawn up (of course in reality pushed or floated), and widens out, leaving an irregular border, exactly as after the termination of the real waterspout. The action evidently is the

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passage of the internal heavy vapour through the slits left at the corners by centrifugal force, and the descent of the external atmosphere from above to take possession of the partial vacuum. The ascent of a similar cone would, of course, take place from an opening in the bottom, as happens with the air and spray from the sea in the real waterspout; but this part of the operation presents difficulties in practice. A gentle rotation is sufficient for the above experiment.—While making these experiments, I was pleased to find that frequently two, three, or even four or more cones descended and appeared, as the whole revolved, to coil and twist round each other. I likewise saw a complete explanation of the so-called swallowing action of the waterspout. The shreds forming the descending columns are frequently not round, but flat at one end and round at another, and sometimes resemble a slightly twisted ribbon. So, when a flat part, seen at a distance great enough to prevent its rotation being detected, presents itself alternately edgeways and then with its flat side to the eye, it seems as if it had dilated and subsequently collapsed, giving the appearance of drinking.—In conclusion, I would state that the waterspout consists of shreds of cloudy air pushed down into the interior of the portion of the atmosphere below, which has been rarefied by the action of a rotation, probably originally caused by contending currents. When the rotation is very regular and circumstances favourable, the descending column may possess symmetry and a circular section, but at other times there may be many columns, which then, however, have not each a separate rotation about it, but go round with the general mass; the rotation in the central space, where they exist, being of course slow. The ascent of the spray and air from the surface of the sea, or of light bodies from the land, is produced by the same cause."

TRADE WITH SIAM.

Mr. Thomas Dalton, jun., of Bangkok, furnishes the following particulars relating to the Trade of Siam:—

Eighteen months since, scarcely any Foreign ships visited Siam. Since the Treaty with the United States and Great Britain, however, a large amount of shipping has arrived at the city of Bangkok, the capital of Siam, principally as yet to load cargoes for China and Singapore. A very large amount of tonnage will, in future, be required at this Port for foreign as well as for local trade. Siam, it is now getting to be known, is an additional Port in the East, which will in future afford a large business for shipping of all nations, and as yet statistics show the American has had the largest share. It is to be hoped, this Port will be the pioneer of numerous others to be opened shortly in the Eastern Archipelago to civilization and commerce.

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In Siam, nearly all the products of the East can be purchased. The present "Second King," the monarch in actual authority, evinces a disposition of enterprise, and appears anxious to cultivate friendly relations with other countries. He is also endeavouring to extend the cultivation of his own country on a large scale, and now freely offers facilities to strangers to explore the interior, which many are doing, and several parties have started on a prospecting expedition for gold, which is known to exist. The rather isolated position of Bangkok often deters Shipmasters, when in the neighbourhood, from seeking business there. It is situated at the head of the Gulf of Siam, and, except close in shore, no danger exists in the passage up the Gulf. H.B.M. schooner *Saracen*, and a Captain Bonniman, in the employ of the King of Siam, have now surveyed the Gulf, which survey has been published. Two charts of 1857 and 1858 can now be purchased at any Shipchandler's in the East.

The shipping is always visible about eight miles from the anchorage, and it is advisable, upon arriving in the roads, to anchor well to westward. If arriving at sundown, it is better for a stranger to remain until morning, and at 4 a.m. proceed on shore to Paknam, about 12 miles from the roads, steering for a mound, the only land visible, which is at the mouth of the Menam; keeping well up to the westward, or the current will sweep you past the mouth of the river. Upon arriving at Paknam, which is but a small village, if your ship is to proceed to Bangkok, a Pilot can be obtained from the Governor to bring the ship in over the bar the same day; or, if you require to communicate with your agents, you can obtain a boat and men from the same source to proceed to Bangkok, which, in all cases, is more practicable than using your own men and boat, owing to the excessive heat and distance,—and so arrive at the city early in the day. The authorities, by the late treaties, are bound to provide Pilots for the bar, and facilities to strangers arriving also—at a very moderate charge. As the whole country is nearly level with the water, it is most difficult and even dangerous to attempt to find the mouth of the river during the night.

The city of Bangkok being comprised of bamboo houses, afloat, moored on each side of the river, also renders it difficult to find your agents at night. The whole country being full of Chinamen, who would be glad of a chance of leading you astray for purposes of plunder, too much trust ought not to be put in the "Siamese," except those obtained from the Government. There are so many tributaries to the river in the shape of creeks, which extend a long way up the country, that an unfortunate individual could easily be disposed of. The bar extends three miles in length, and on it, at spring tide, 13½ feet of water is found, and from the bar up to the city 7 to 10 fathoms, no dangers in the way. The river banks are of soft mud, and very bold. No Pilots are necessary for the river. In the event of arriving at Paknam during the night, a strangers' house has been built for their accommodation—the only house allowed to any other than "Siamese." For fear of white men getting any

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influence or footing at this place, no privileges are allowed but this strangers' shelter.

Previous to November, 1856, no foreign ships visited Siam except Chinese, to whom the Siamese pay tribute yearly, and a few Parsees, Armenians, and Arabs. At this date there are 60 large American and European ships in the roads and at the city. The lightering to ships in the roads is done principally by American light draught barques and brigs, carrying from 4000 to 5000 piculs at 10 cents a picul. A few junks and lorchas are also employed in this business. During the N.E. monsoon, ships ride safely in the roads at single anchor, and load without detention by any swell. In the S.W. monsoon a heavy swell sets in, causing detention, but no danger. Lighters sometimes remain a week unable to cross the bar, on which a heavy sea rolls. The holding ground is good. During the past year, immense additional tracts of land above Bangkok and Yuthia have been cultivated with Rice and Sugar to meet the demand required by the opening of trade with foreigners, and a large increase of produce has been raised above that of the previous year. Rice and Sugar are the two staple articles, and form the principal export. Teelseed, Sticklac, Sapan Wood, Gums (various), Teak Timber, Gamboge, Pepper, Cocoa Nut Oil, Horns (of many descriptions), Hemp, Raw Silk, and Ivory, are exported, but at present form an inconsiderable item in exports, when compared with the two former articles.

Rice can be procured nearly all the year round. The cultivation commences in the month of June. The estimated crop last year was 30,000 tons, with capabilities of doubling that amount. It is of excellent quality, of long grain, and much liked by the Chinese, and in the San Francisco and Australian (now not inconsiderable) markets. It is equal to first quality China, sold by the coyan of 100 tubs, equal to 21 piculs of 133⅓ lb., and is liable to an export duty of 4 ticals a coyan. The present price is 30 ticals a coyan. Last year the same rice sold for 19 ticals (equal to 60 cents each tical, or 2s 6d sterling). The large amount of tonnage now here is the cause of this rise in price, which is almost prohibitory for the China market.

Sugar.—There are three qualities of white, and many of brown; the former is much used by confectioners, and is of a very superior quality. It commences coming down to the city about the month of December. The crop was estimated last year at 300,000 piculs. The price ranges from 9 to 9½ ticals a picul for the white qualities, and good brown 4 to 5 ticals. An inland duty being paid by the growers, it is exempt from export duty. The resident Armenians and Parsees have hitherto been the principal buyers of sugar in Siam, which they export in native ships to Bombay, and ports in the Persian Gulf.

Sapan Wood.—For the China market the large size is preferred; small and middling for the Straits and Europe; 7½ salungs to 12 salungs picul. Duty on exports 2·2 salungs picul.

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TEELSEED is principally taken by French ships for Continental ports; price from 55 to 60 ticals coyan of 19 piculs. No duty.

HIDES.—Cow 14 to 15 ticals picul; bull 11. Duty 1¾ ticals picul.

HORNS.—Deer 7½ ticals picul; Buffalo 11½. Duty 1 salung.

GAMBOGE 32 to 35 ticals picul. Free.

COCOANUT OIL AND COCOANUT 8½ to 12 ticals picul. Free.

STICLAC 9 to 10 ticals picul.

GUM BENJAMIN. Nominal; 50 to 100 ticals.

All produce is sold for cash. The best mode of placing funds at Bangkok is by clean credits on the United States or Europe, negotiated at Singapore, and Spanish or Mexican dollars shipped from thence. The tical is the token, or currency, without which no purchases can be made of the Siamese. By taking your dollars to the Treasury at Bangkok, you can obtain ticals in exchange. Owing to the defective means of coining this token, only 30,000 per week can be obtained for all requirements of the merchants. This amount is far below the present demand, which is 300,000 weekly.

The Foreign Consuls have represented to the Siamese Government the annoyance and detention to business owing to the small amount of ticals in circulation, difficulty in obtaining them, and losses also sustained by merchants in exchange, by their having to purchase from private resources. As yet but little notice has been taken of their communication.

The exchange at present is 158 ticals to $100 (Spanish), the currency is 4 salungs to 1 tical, 8 fuangs to 1 salung—all a similar lump of silver, stamped with a Siamese seal.

By a late Government proclamation, the value of a tical is fixed at 60 cents of a dollar, and a dollar itself is a lawful tender. A combination of merchants to force the dollar into circulation might succeed, could the Parsees and Chinese be brought to co-operate. A complete coining apparatus is now on the way out, to be presented to the Second King, which may be an inducement for him to alter the currency. All business transactions with the Siamese planters and boatmen, who bring down the produce, is done through brokers, who are mostly women, converted by and speaking Portuguese. By engaging one of these women to buy, for a slight commission, any stranger can purchase a cargo, independently of merchants or others.

The weights are a picul of 133⅓ lb., and coyan of 19 piculs; but in many cases the coyan is 20 piculs.

The diseases most likely to attack Europeans are dysentery and chills, and fever or ague—the former most prevalent and fatal. Both can, however, be avoided by attention to your clothing at night and morning, and attending to your diet. Very few Europeans are attacked that conform to the Siamese mode of living, which all the long residents do. Several families have been residing at Bangkok for years, and look tolerably healthy.

IMPORTS.—Dry goods are the principal, such as suitable for the Singapore markets, but to a limited extent, as the trade is entirely in

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the hands of the Chinese at present. The European consumption of any commodity in Siam is very small.

FOREIGN MERCANTILE HOUSES IN BANGKOK.—D'Almeida, & Co.; Kerr, Rawson & Co.; Maclaine, Fraser & Co.; Borneo Company (Limited) of Singapore; Russell & Co.—D. O. Clark, Agent; Augustine, Heard & Co.—J. Parker, Agent; Pickenpack & Co.; J. K. Mason; and Remi, Schmidt & Co. of China; Hamilton, Gray & Co., Singapore.

REPORT ON THE LOSS OF THE CORNWALL,

WITH REMARKS ON MAKING PORT LOUIS, MAURITIUS, DURING THE NIGHT.—PROPOSED ALTERATION OF LIGHTS.

The following Report of the proceedings of the Marine Board at Mauritius on the loss of the barque *Cornwall*, 872 tons, on the reef to the W.S.W. of Canonnier Point Lighthouse, on the morning of the 14th July, 1858, has been published:—

In the evidence given by the Commander, mates, and carpenter of the *Cornwall*, touching the loss of that ship on the 14th instant, there appears to the Board to be only one circumstance which can be admitted as extenuating to some degree the fact of the ship having been lost on a reef, distant only a short mile from a Lighthouse showing a Fixed Light of the first order. Extenuation is, however, the very utmost that can be conceded, for to nautical men generally there is no doubt that the loss of a ship so near such a Light, on a fine, clear, starlight night, with the wind off the land, will ever be inexcusable. The circumstance referred to as furnishing some excuse, or extenuation, is the following:—It would appear, that both the Captain and the Chief-officer had been misled by the sailing instructions, which in fact are to some degree calculated to lead into error, inasmuch as it is therein stated, that after passing Canonnier Point, *en route* for Port Louis, the Light changes from White to Red, on approaching the reef too near. Of this change the Chief-officer had been informed by the Captain, and knowing that he was approaching, he was looking out for the Red Light to make its appearance up to the moment of striking. The unfortunate absence from the deck of the Captain, who, after remaining up till four o'clock, was obliged to go below on account of his suffering from a sprained ancle, by which the charge devolved on the Chief-officer, who had never been at Mauritius before, had made no inquiries about it, had seen neither sailing instructions nor charts, knew nothing whatever of the nature of the approaches, not even if there were a reef to leeward of the island, and who consequently was incapable of taking intelligent charge, had no doubt something to do with the loss of the *Cornwall*. Captain Grant is an old and experienced commander, and up to this time had never met with an accident of this nature—not even grounded his ship. The Board has not the slightest doubt, that the pain he was suffering obliged him to leave the deck, after being up so long; but it appears

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an error in judgment to have allowed the ship to approach the land during his absence. With so many souls on board, entrusted to his care and guidance, heaving to with ship's head off shore would have been the wisest course; and but little if any ground could have been lost by so doing, as it wanted but two hours of daylight.

The Board regrets again to record that neglect of the lead that has in almost every instance of wreck on this coast, occupied so prominent a place in the investigation that followed. On this occasion, the lead was on deck, having been hove at four o'clock; and the Captain states, that in the instructions he gave his Chief-officer, he ordered it to be attended to; yet, relying on the change from White to Red, which should announce the ship so near the reef, the *Cornwall* is steered directly for the Light for at least three-quarters of an hour, without any attempt at taking soundings, or any certainty with regard to her rate of sailing (for there was a difference of opinion on this important point). It is not too much to say, that the *Cornwall* never would have been lost had the lead been kept going. But even whilst relying on the printed instructions, and waiting for the Light to change colour, how near did the chief-officer intend approaching it before going about? The ship struck within three-quarters of a mile of the Lighthouse, and at that distance not only must the Light have been dazzlingly brilliant, but, as stated in the evidence of the second officer, it lighted up the water so as to shew the edge of the reef, and small rocks above the surface. Although the sea was remarkably smooth at the time, the Lighthouse itself, and the outline also, must have been distinctly visible, and ought to have warned the most indifferent that the ship was a great deal too close in.

The Board further remarks, that as the *Cornwall* was steered directly for the Light till she struck on the reef, the Light was always on the same bearing, and a little reflection would have shown that, to alter its colour, it was first necessary to alter the bearings, which, in the case of the *Cornwall*, was not done.

The Board takes the present opportunity of remarking, that the land on the north side of this island is so low, and so indistinct at night, that dodging about the reefs between Canonnier Point and the Harbour, must always be a hazardous proceeding, and no possible advantage can result from it. It were far better to keep well off the land, even at the risk of being somewhat to leeward of the port in the morning, than to run on the reef, by seeking to keep a weatherly position. Many vessels have narrowly escaped shipwreck of late years by hugging the land too close in the night time, and Commanders would do well to profit by the knowledge of such facts, and not unnecessarily run into the same error. It is true, that when the S.E. trade blows strongly, and the water on the lee reef is smooth, vessels may, on touching, frequently be backed off; but it may also happen, as in the case of the *Cornwall*, that a S.W. wind and swell may set in, and then the chances of getting afloat are small indeed. In the conclusion, it is evident that the changing of the Canonnier Point Light from White to Red, indicating too near an approach to

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the reef, is not to be relied on, and it is therefore calculated to lead those who depend entirely on such a change, into danger.

The Board, therefore, respectfully suggests that it will be advisable to do away with the Red shade altogether, and trust solely to the bearings of the Light and attention to the lead to keep clear of the reefs, so soon as the information of such change shall have had time to reach the different ports to which it may be deemed advisable to send it—the time of such alteration to be fixed for the 1st January 1859.

D. WALES, President and Harbour Master.
T. H. MULLENS, Surveyor to the Mauritius Marine Insurance Company.
P. A. WIEHE, President of the Chamber of Commerce.
G. IRELAND, Agent for Lloyd's.

PRESERVATION OF LIFE FROM SHIPWRECK.

A meeting of the Royal National Life-boat Institution was held at its house, John Street, Adelphi, on the 7th October, Thomas Chapman, Esq, V. P., F.R.S., in the chair. There were also present, Admirals Sir Thomas Herbert, K.C.B., Fitz Roy, and Bullock, W. H. Harton, Esq., Captain Hall, R.N., C.B., F.R.S., Captain Robertson, R.N., Surveyor-General to the Board of Trade, Montague Gore, Esq., James Peake, Esq., Major Palmer, Captain Lambert Perrot, and General Blanshard.

Mr. Lewis, the Secretary, having read the minutes of the previous meeting—

A reward of £14 was voted to the crew of the Institution's Life-boat, stationed at Arklow, for their laudable services in putting off in the boat, and rescuing eleven men from the barque *Harriet and Frances*, of Liverpool, which, during a heavy gale of wind, was wrecked on Arklow Bank, on the 2nd ultimo. As soon as the wreck was observed, the Life-boat was launched immediately. On reaching the wreck, however, it was found impossible to board it, in consequence of the tremendous sea that was on the sandbank, which is nine miles from the nearest land. The Life-boat's crew, who had unbounded confidence in the qualities of their boat, decided, however, to perish rather than abandon the poor fellows who were on the forlorn wreck. After much difficulty a communication was effected with the ship, and the eleven men were hove singly in a Life-buoy through the heavy surf on board the Life-boat. They were afterwards, late at night, brought safely on shore. Four of the ship's crew had previously taken to two of their boats; no sooner was one of them lowered than it was capsized by the violence of the sea; two of the men, however, succeeded in retaining their hold on the bottom of the boat. From their perilous position they were rescued by a smack's crew, who also took on board the other two men. The smack's men, who had not dared to venture near the sandbank, were voted £5 10s by the Institution for their laudable and timely services.

The thanks of the Institution were also voted to the Rev. O. Lloyd Williams; and £5 : 10s to the crew of the Barmouth Life-boat, for putting off in her and rescuing the crew, of two men, of the flat *Isabel*, of Liverpool, which, during a gale of wind, was wrecked on Barmouth Bar, on the 18th ultimo. With the dawn of that day the two men were seen

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in the rigging. The Life-boat was immediately launched, and after half-an-hour's pull, the vessel was reached, and her crew taken off in safety.

A reward of £5 10s was likewise voted to a smack's crew, for putting off from the shore and rescuing five out of six persons from a sailing boat, which, at some distance from Scarborough, was observed to be unmanageable.

A reward was also voted to a coast-guard man named Lisk, for his laudable conduct in wading into the serf, at some risk, to the rescue of a man who had fallen from a pier into the sea on the coast of Donegal. Lisk, as soon as he saw the man in the water, ran to his rescue, but being breathless from his long run, he could not dive to bring him up. He, however, got into a boat, into which he was promptly followed by a lad, who was also rewarded; he then succeeded, by means of a long oar, in bringing the man to the surface, who was by this time quite senseless, and to all appearance dead. Lisk immediately placed the man on his face in the boat; a copious discharge of the water took place, and he gradually revived. Another moment might have proved fatal to the poor fellow. The old plan of treating persons apparently drowned, was to place them on their backs; and had such a course been unfortunately adopted in this case, the man would unquestionably have been suffocated. The Committee of the National Life-boat Institution have of late taken much trouble in procuring the best possible information, both in this and in foreign countries, on this most important subject. The result has been, the issuing by the Institution of a code of instructions for the treatment of the apparently drowned, which is as simple as it is natural, and which can be used by any one instantaneously and on the spot. It is based on the principles of the eminent physiologist, the late Dr. M. Hall. These instructions have been extensively circulated throughout the United Kingdom, our Colonies, and in her Majesty's fleet.

The Wick life-boat, which, like the Arklow and Barmouth boats, is on Mr. Peake's plan, was said to have performed valuable service during the past month in saving two ships' crews.

The Institution decided to build new life-boats for Dungarvan, Tramore, and Exmouth. Lady Rolle had munificently offered £250 towards the cost of the latter establishment.

Payments, amounting to £692 17s. 6d., were made at this and the previous meeting for various life-boats, boat-houses, and carriages.

The total number of persons saved from shipwreck since the first establishment of the Royal National Life-boat Institution, by its life-boats and other means, and for rescuing whom the Committee have granted honorary or pecuniary rewards, is 10,475. Who can contemplate this large number of lives saved from a watery grave without heartfelt satisfaction; and to those who have directly, by their individual exertions, or to others who have indirectly, by their subscriptions, contributed to that happy result, that satisfaction must be greatly enhanced. The operations of the Institution may be thus briefly stated:—Since its establishment, it has expended upwards of £25,000 on life-boats and their appurtenances, and has voted 79 gold medallions and 603 silver medals for distinguished services for saving life, besides pecuniary rewards, amounting to £10,699. A glance at the important facts we have just given, must convince every one, that if the truly national and philanthropic operations of the Life-boat Institution are to be carried on successfully, as hitherto, it is very important that the public should extend to it their support, which we trust will be given in a liberal manner.

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Captain Robertson, R.N., Surveyor-General to the Board of Trade, stated that he had recently visited the Life-boat stations of the Institution on the east coast, and on some parts of the Irish coast, and that he had found them in a satisfactory state.

NAUTICAL NOTES.

Australia—S. Coast—Bar at Port Adelaide: — The operations at the *outer* Bar of Adelaide, having been completed for deepening this season, the depths of 14 feet at low water, and 22 at high water, spring tides, have been attained.

The depth of water on the *inner* Bar still remains the same, being 9½ feet at low water spring tides.

The tidal signals at the semaphore are made in reference to the depth on the *inner* Bar, to which four feet may be added to show the water on the *outer* Bar.

Heavy moorings have been laid down at the upper part of the Harbour, where ships drawing 17 feet may lay afloat at all times of tides; the bottom is even, should ships of greater draught require to moor there.

The ship *Zulieka*, Capt. J. A. Simpson, arrived at Calcutta from Melbourne, on 4th August, in only 36 days from Port Phillip Heads, having passed through Torres Straits; her average distance per week has been about 1600 miles. She has made the passage from England to Calcutta *via* Melbourne, including a stay of five weeks there, in the unprecedented short time of five months and a few days.

Reopening of the Channel separating the Island of Eubœa (Negropont) from Eastern Greece:—This passage has been deepened to the uniform draft of 5½ French metres, or 18 feet English, and reopened for the passage of vessels not drawing more than 18 feet.

REWARDS AND TESTIMONIALS.

Her Majesty's Government have awarded to **Juan Bondereff,** Master of a Russian coasting vessel, named the St. Nicolaf, and to the five Russian Seamen forming her crew, a Silver Medal each, in approbation of the services rendered by them on the 29th August last, in saving the lives of four of the crew of the *Camilla*, of Shields, who were upset in a boat during a gale in the Straits of Yenikalé.

The French Consul at Dublin having notified the generous conduct exhibited towards the crew of the French ship *Capricieuse*, stranded on the 25th January last, in the Bay of Tramore, by six

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Fishermen, and five Coast-guardmen, who exposed their lives in saving those of the shipwrecked seamen, two of these Fishermen having fallen victims to their devotion, the Emperor of the French has allotted to their families, as well as to the other four Fishermen, a gratuity amounting to 650f., and to the five Coast-guardmen, viz. Robert Aitchison, chief boatman, Alfred Stevens, Henry Stevens, Thomas O'Hearn, and Martin Lynch, a Silver Medal each.

The Board of Trade has awarded Thomas S. Ellis, Master of the American barque *France*, a telescope, for his kind treatment of the Master and crew of the barque *Magistrate*, of Liverpool, abandoned at sea on the 6th August last.

The Board of Trade has awarded the undermentioned, forming the crew of the life-boat stationed at Pakefield, for their gallantry in rescuing, on the 7th instant, during a terrific gale, eight seamen out of a crew 13 hands belonging to the Tuscan barque, *Zemira*, of Leghorn, wrecked on the south part of Newcome Sand, off Pakefield —to Nathaniel Colley, the Coxswain, a Silver Medal; to John Warford, Robert Lewis, John Lewis, William Pearce, Charles Pearce, William Fuller, George Warford, Charles Mullender, Henry Colley, Edward Mullender, Robert Lincoln, Robert Colby, George Lewis, George White, John Peek, William Carr, Nathaniel Colley, jun., William West, John Chapman, James Peek, William Pipe, and Robert Adams, a Bronze Medal each.

CERTIFICATES SUSPENDED.

At a meeting of the Local Marine Board for the port of Liverpool, held on the 11th September, an investigation was held upon a charge of gross drunkenness, preferred against William Henry Grebow, late chief mate of the screw steamer *Arno*, of Liverpool. The court being of opinion that the charge of a gross act of drunkenness had been fully proved, the Board of Trade have directed, that the Certificate of Competency, No. 191, of William Henry Grebow, shall be suspended for three months.

At a meeting of the Local Marine Board for the port of London, held on the 16th September, George Hayes, master of the *Ellenborough*, of London, official number 23,390, was charged by George Joseph Briggs, late first mate of that vessel, first—with neglect and incompetency; second—with taking improper liberties with the Coolie girls: third—with being drunk and suffering from delirum tremens during the time the ship was in imminent danger of sinking: fourth—with having suggested to cast the ship away; and fifth—with not keeping boats in proper order. The Local Marine Board reported to the Board of Trade, that on the second charge they declined to give any opinion; that the fourth and fifth charges were not proved; but the first and third were proved, and also that Captain Hayes had frequently been in the habit of drinking largely, though not to incapacitate him for ordinary duty.

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The Board of Trade have consequently issued instructions that the Certificate of Competency, No. 17,128, issued to the said George Hayes, should be suspended for twelve months.

At a meeting of the Local Marine Board for the port of Shields, held on the 31st August 1858, at the Shipping Office, North Shields, in the matter of an investigation, authorised by the Lords of the Committee of Privy Council for Trade, into a charge of drunkenness and misconduct made against James Fairney, late master of the barque *Sarah Wascoe*, of Shields, while master of that vessel, by Mr. George Wascoe, the owner; evidence having been adduced, the Board were of opinion, that Captain James Fairney had been proved to be guilty of gross acts of misconduct and drunkenness on the voyage in question, and the Board recommended that his Certificate of Service, No. 73,482, be suspended for a period of at least twelve months; which recommendation the Board of Trade have directed to be carried into effect.

A meeting of the Local Marine Board of Greenock was held on the 24th September, to investigate charges of drunkenness and neglect of duty preferred against Robert Nicol by the crew of the *Arethusa*, of Glasgow, of which vessel he was mate, but became master on decease of Captain Stewart. The Court having found the defendant guilty of drunkenness while in charge of the said ship during the last voyage, and of consequent neglect of duty under circumstances of great aggravation, the Board of Trade have directed that his Certificate of Service, No. 70,286, be suspended, and that at the expiration of twelve months his case be further considered on production of proof of amended conduct.

CERTIFICATE CANCELLED.

A Naval Court was held at the British Consulate, St. Thomas, on the 7th June 1858, to try George Joseph Briggs, first officer of the *Ellenborough*, of London, on a charge made against him by George Hayes, master of that ship, of mutinous conduct, and assault upon the person of the complainant. The defendant acknowledged the offence with which he was charged, and the court ordered him to be discharged from the ship, to be confined a close prisoner in the fort until the sailing of the first packet for England, and that his wages be made liable for expenses of imprisonment and of the court. In consequence of this decision, the Board of Trade have directed that the Certificate issued to Mr. Briggs from the Trinity House, London, be cancelled, and that he be not allowed to go up for examination, or receive another Certificate, for three months.

ROCKS AND SHOALS.

China—East Coast—Chusan Archipelago :—Lieutenant J. Ward, R.N., of H. M. Steam Yacht *Emperor*, furnishes the following particulars respecting the rock on which the British Ship *Cairnsmore* was lately wrecked :—

Cairnsmore Rock.—This dangerous pinnacle rock, not more

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than thirty or forty feet in diameter, rises almost perpendicularly from soundings of 12 fathoms at about 2½ miles to the eastward of the east end of Raffles Island, in the northern part of the Chusan Archipelago.

The precise depth on the pinnacle could not be ascertained, as the wreck, with her foremast standing, at present, quite covers it, but not more than 11 feet will be found over it at low water springs.

The position of the rock is in lat. 30° 42′ 10″ N., long. 122° 34′ 40″ E., and from it the south-east point of Senhouse Island bears South: a small rugged rock lying close to the south-east point of Raffles Island, and in line with the point, S.W. by W.¼W.; and the northern rock of the group lying off the north part of Chesney Island, N.W. by W.¼W.

Caution.—Vessels navigating the channel between the Saddle group and Raffles Island, are cautioned for the future to keep well over towards the Saddle Islands to avoid the above danger, as the lead will give no warning when approaching it. In sailing north, when the Bit Rock opens south of the South Saddle, they will be to the northward of the Cairnsmore Rock; and in sailing south, when the same rock opens north of the South Saddle they will be to the southward.

Bearings Magnetic.—Variation 1° *W. in* 1858.

See Admiralty Chart, China, East Coast, Sheet viii., Hieshan Isles to the Yang-tse-kiang, including the Chusan Islands, on which the above danger is marked.

China – West Coast of Tai-wan or Formoza:—Vuyloy Shoal.—A shoal, with heavy breakers on it, was seen from the mast head of H.M.S. *Inflexible*, during her recent visit to the west coast of Formoza, and from its position it is supposed to be the Vuÿloÿ shoal of Dalrymple's chart, copied from a Dutch manuscript in 1792. It lies a good mile from the low shore, and from bearings taken when near its north and south sides, it was found to be in about lat. 23° 2′ N., long. 120° 6′ E., Joss Islet tree clump N.E. by E. ½ E., and Fort Zelandia E.S.E. ¼ S.

As it was blowing hard this danger could not be farther examined, but it appeared to be about three quarters of a mile in circumference, and to have not more than 10 or 12 feet water on it. Vessels, when bound from port Kok-si-kon to port Ta-kau-kon, will pass well to the westward of the shoal, by not approaching the coast within three miles, or not coming into a less depth than 4½ or 5 fathoms, until Fort Zelandia bears east.

Bearings Magnetic. Variation 0° 34′ *West in* 1858.

See Admiralty Chart, Formoza Island, No. 1,968, and west coast of Formoza from port Kok-si-kon to port Ta-kau-kon, No. 2,409, on which this danger is marked.

Gulf of St. Lawrence:—Capt. W. Grange, of the S. S. *North American*, writes as follows:—

September 27th 1858—a beautiful clear day with a very

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smooth sea: Noon, lat. by observation 50° 4′ N., long 60° 40′ W.; steering S.E. by E ½ E (true), 1 30 p. m., outer Islets Woolf Island abeam N.N.E. ½ E. (true) 3 to 4 miles distant; ship struck on a sunken rock. The first cast of the lead after we were clear gave 10 fathoms and then 12 fathoms.

Indian Ocean—Strait of Gaspar:—Capt. Carl L. A. Breitag, of the ship *Alwina*, says that, on the afternoon of March 28, 1858, he passed close to a rock 1½ miles N.N.W. from the north-westernmost of the 11 Islands off the north-west Hook of Billiton Island, which Rock is not marked on any chart that he is acquainted with. It appeared to him to be a detached danger, 6 to 9 feet under the surface, and there was deep water close to it all round. His soundings make him certain that it did not form the outer part of the reef surrounding the islands, but that it was an isolated Rock. The position according to the chart, is lat. 2° 27½′ S., and long. 107° 42′ E. The depth off the Islands has hitherto been supposed to be not less than 18 fathoms,—and on referring to the Dutch and Admiralty charts, as this Rock is not inserted on either, it appears to have hitherto escaped notice.

Bay of Bengal.—Capt. Cooper, of the American Ship *George Marshall*, writes, that on his passage from Akyab to Moulmein, while nearing the land on the morning of the 19th May, the unusual swell and short chop of a sea on, led him to think that he was in shoaler water than laid down on the chart:—On sounding,* he was surprised to find but 4 fathoms, when he supposed himself about 30 miles W.S.W. from Kalagouk. The following are the particulars from the journal:—On the 19th at 5 a.m., steering N.E. by E. for Double Island, sounded in 16 fathoms. At 6, sounded again and found but 4 fathoms. We immediately hauled up on the wind, and stood along E.½S. two hours and a half, ship's rate about 7 miles an hour. Soundings varying from 4 to 6 fathoms, the shoalest water being "half three." At about 9 a.m., we deepened our water suddenly to 12 fathoms; 9½ a.m., made the Island of Kalagouk, the southern end bearing N.E.½E., about 8 miles distant. At 4 p.m., arrived at Amherst. This shoal is directly in the track of ships beating down the coast in the south-west monsoon.

* Capt. T. C. Harton, Master Attendant at Moulmein, says:—These soundings must have been at first quarter ebb, if not at high water.

Java Sea—N. E. entrance of Strait of Sunda:—Capt. B. D. Keeman, of the ship *Caroline Coventry*, gives the following extract from his private journal:—

"Saturday, May 22, 1858—at 8 a.m., wind S.W., moderate, and fine, West Island S.S.E.½E. three or four miles, all sail set, standing to S.S.E. At 8.30, bore away to go to leeward of West Island. At 9, when the island bore N.W. by W. one mile, saw a

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shoal partly above water, and breakers of about a quarter of a mile in extent, bearing S.W. by W. two miles. At 10, wind veered to S.S.W.; tacked to the westward, and at 10.45 passed the shoal, distant then about three or four miles, and observed that it was on a line with the island, bearing N.N.E.$\frac{3}{4}$E. The centre of West Island is laid down as in 5° 28′ S., and 106° 27′ E. I therefore presume the shoal to be in about 5° 30$\frac{1}{2}$′ S., and 106° 25$\frac{1}{2}$′ E."

CONDENSED LIST OF

CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from September 25th to October 25th, 1858.

Australia—South Coast—Fixed Light on Gabo Island, Cape Howe:—The Fixed White Light, shown from the lantern supported by a skeleton timber frame near the middle of Gabo Island, at 5$\frac{1}{2}$ miles to the S.W. of Cape Howe, is *eclipsed* from S. by E.$\frac{1}{4}$E. to S.$\frac{1}{2}$W. for about 2 miles seaward, by a small range of sand hills; the Light may be seen at a distance of 17 miles. A stone tower, to bear a Fixed Light of greater power than the above, is to be built on the south east point of the Island, due notice of which will be given.

Australia—South Coast—Revolving Light on Cape Otway:—The Revolving Light, exhibited from the white stone tower on the extreme south-west point of Cape Otway, shows a Bright Flash *every minute*, visible in clear weather at 24 miles. Mariners are reminded that a dangerous reef lies three quarters of a mile to the S.S.E. of the Light-tower.

Australia—South Coast—Revolving Light on Cape Willoughby:—The Revolving Light at Cape Willoughby, the south-east extreme of Kangaroo Island, exhibits its greatest brilliancy every *one and a half minutes*, and illuminates an arc of the horizon, to the distance of 24 miles, from N. by W.$\frac{1}{4}$W., round easterly, to S.W.$\frac{1}{4}$W.

Australia—South Coast—Revolving Light on Cape Borda:—The Lighthouse erecting on Cape Borda, the north-west extreme of Kangaroo Island, would probably be completed in July 1858, and would then exhibit a Revolving Light, showing a Bright and Red face alternately every *half minute*. The tower is about 60 feet above the Cape, or about 510 feet above the sea level, and the Light will be visible in clear weather at 30 miles.

Australia—South Coast—Port Phillip:—The following

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information respecting the alterations made from time to time in the Lights at Port Phillip, has lately been published :—

Light Ships in West Channel :—The Upper Light-ship, moored at the north end of the west channel into Port Phillip, is painted Red, and has three masts ; the fore and main masts are each surmounted with a Red Ball. A Bell is tolled during foggy weather.

The Light-ship lying at the south-west end of Swan Spit is to be removed in a few months, and a Light of the same character will then be exhibited from a Lighthouse now being constructed on piles near her present position.

Lights in Geelong Harbour :—The Light Ship in Geelong Harbour lies near the Bird Rock, at the eastern entrance of Ship Channel, and exhibits a Fixed White Light, visible at 7 miles. The vessel has one mast, surmounted with a Ball, and is painted Red. A Bell is tolled during foggy weather. Tidal signals are exhibited on board, showing the height of water on the bar.

Lights in Hobson Bay, Melbourne :—The Fixed Light exhibited from Gellibrand Point shows Red, *seaward*, from S.W. to S.E. ; and White the remainder of the circle.

A Fixed Red Light is exhibited from the end of Sandridge Jetty ; a Fixed Green Light from the end of Sandridge Railway Pier ; and a Fixed Red Light from the end of the old jetty at Williams Town. All three Lights are visible seaward at a distance of 3 miles.

Bearings magnetic. Variation $5\frac{1}{2}^{\circ}$ *East in* 1858.

Mediterranean Sea—Island of Malta—Fixed Lights, Valletta Harbour :—On and after November 1st, 1858, two Fixed Red *vertical* Lights will be exhibited, at an elevation of 55 and 80 feet respectively above the level of the sea, from the white circular tower, 41 feet high, standing S.S.E.$\frac{3}{4}$E., 23 yards within the north-west angle of Fort Ricasoli, at the entrance of Valletta Great Harbour.

The Lights will be visible in clear weather at a distance of 4 miles, and will illuminate *seaward* from E.$\frac{1}{2}$N., round northerly and up the harbour, to S.W. by W.$\frac{3}{4}$W., or in the direction of the Mark-Buoy off Senglea Point. When bearing S.$\frac{1}{4}$E. they will lead just clear of the Mark-Buoy off St. Elmo Point ; and by keeping them in sight when proceeding up the harbour, they will lead clear of St. Angelo and Senglea Points.

Bearings magnetic :—*Variation* $13\frac{1}{4}^{\circ}$ *W. in* 1858.

Mediterranean—Sicily—Fixed Light on Cape Grosso, Levanzo Island :—On and after the 1st October 1858, a Light will be exhibited from the Lighthouse recently erected on Cape Grosso, Island of Levanzo, north-west coast of Sicily.

It will be a Fixed White Light, elevated 282 feet above the mean level of the sea, and should be seen in clear weather at a distance of 18 miles. The position of the Lighthouse is in lat. 38° 3′ 30″ N., long. 12° 21′ 26″ E.

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Mediterranean—Sicily—Fixed Lights at Port Messina :—On and after the 1st October 1858, a Fixed White Light will be shown from the extremity of Fort Campana, of San Salvatore, at the entrance of the port of Messina, to point out the entrance by night. The Light will bear N.W. by W. from the Light-tower of San Raineri, and should be visible at a distance of 2 miles.

Also on and after the 1st February 1858, the present Fixed White Light exhibited from a lantern on Punta Secca, will be replaced by a lantern fitted with lenses, showing a Fixed White Light, which should be visible at a distance of 3 miles. Punta Secca lies N. by W. 2½ cables' lengths from the Light Tower of San Raineri, about midway between that Tower and Fort Salvatore.

Bearings magnetic.— Variation 12¾° *W. in* 1858.

Mediterranean—Sicily—Fixed Light at Port Syracuse :—The present lantern exhibiting a Fixed Light from the Fort on the north side of the entrance to Port Syracuse, would be replaced by a lantern, fitted with lenses, which would exhibit, on and after the 1st June 1858, a Fixed Red Light at 86 Feet above the mean level of the sea, visible in clear weather at a distance of 10 miles. The position of the Light is in lat. 37° 2′ 58″ N., long. 15° 17″ E.

Mediterranean—S. Coast of France—Fixed Red Light at Port Ciotat :—On and after the 15th October 1858, a Fixed Red Light would be exhibited all night from the Tower recently constructed on the head of the new mole of Port Ciotat, on the south coast of France. The Light is elevated 52 feet above the mean level of the sea, and is visible at about 6 miles.

In entering the Harbour, the above Red Light must be kept *to port*, and the Fixed White Light on the môle Bérouard *to starboard*.

Mediterranean—Corsica—Fixed White Light at Port de I'lle-Rousse :—On and after the 15th October 1858, a Fixed White Light would be shown all night from a lantern placed at the centre of the head of the jetty of Port de I'lle-Rousse, or Isola Rossa, on the north-west coast of the island of Corsica. The Light may be seen in clear weather at a distance of 5 miles.

Scotland—Shetland—Whalsey Skerries Lighthouse—Exhibition of Permanent Light with change of site :—On the 1st of December 1858, the temporary Light on the Island of Gruna Out Skerries, Whalsey, will be discontinued, and the Light will thenceforth be exhibited from the permanent Lighthouse Tower, on the Bound Skerry, which is the most easterly rock of the group known by the name of the Out Skerries on the east of the Shetland Islands. The Tower, which is 80 feet in height, will be painted White. The entire height of Tower and Lantern is 99 feet.

It will be a Revolving White Light, attaining its greatest bril-

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liance *once every minute.* It will be elevated about 145 feet above high water spring tides, and will be seen in clear weather about 17 nautic miles, and at lesser distances according to the state of the atmosphere.

Norway – W. Coast—Fixed Light on Lepsoe Reef:—On the 6th October 1858, or as soon after that date as the weather will permit, the Light-vessel moored off the south-eastern part of the Lepsö Reef (Lepsörev), in lat. 62° 35½′ N., long. 6° 14½′ E., at the entrance to Wigra or Roalds Fiord, would be removed to another anchorage, 3 cables lengths to the N.E. by E.¼E. from the former one, with Viggerö Church bearing W.¾N., and the summit of Hestö Island N. by E.

Bearings Magnetic. Var. 21° *West in* 1858.

Norway—W. Coast—Fixed Light in Hoeievarde Harbour:—The Fixed Light on the extreme of the point forming Höievarde Harbour, in lat. 59° 19½′ N., long. 5° 19′ 52″ E., and which was extinguished on the 1st May 1858 in consequence of the erection of a new Lighthouse, would be again exhibited on and after the 6th October 1858.

Australia—E. Coast – Moreton Bay—Proposed removal of Lightship:—On the 1st January 1859, the Lightship, *Rose*, moored in the Ship Channel, at Moreton Bay, and bearing W.½N. from Cape Moreton Lighthouse, will be removed, and a Beacon, or Buoy, to be described hereafter, will be established there instead of the Lightship.

England—E. Coast—Yarmouth Roads—N. W. Scroby and North Cross Sand Buoys:—An additional Buoy, painted Black and White in Chequers, to be called the *North-west Scroby*, has been placed about mid-way between the North and Middle Scroby Buoys, and lies in 7 fathoms at low water, spring tides, with the following marks and compass bearings, viz.:—

Ormsby Church, open to the Southward of a Double-gable Barn	W.N.W.
Nelson's Monument, on the Outer End of Wellington Pier	S.W. by S.
North Scroby Buoy	N.N.E. ¼ E.
Outer Barber Buoy	W. by N.

Also the *North Cross Sand Buoy* has been moved out about three quarters of a mile N.N.E. ½E. into 7 fathoms water, and now lies with the following marks and compass bearings, viz.:—

Ormsby Mill, its length open to the Southward of the Church	West
Winterton Lighthouse	W.N.W.
Newarp Light-vessel	N. by E ½ E.
N.E. Cross Sand Buoy	S.S.W.

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NEW BOOKS.

NOTES ON CHERBOURG, with a Map. By BEDFORD PIM, Commander R.N., F.R.G.S. London: J. D. Potter, 31, Poultry. Price 1s.

Commander Pim, of "Arctic" and "China" renown, has undertaken, in this little *brochure*, to give an account of Cherbourg, "a fortress of the first order, which dominates the Channel, and frowns portentously on our own shores." Part I. gives the geographical position of Cherbourg and its history, from the days of Julius Cæsar to the present time; and Part II. embraces the rise and progress of the "Port Militaire." The whole account is very graphic, and Commander Pim's concluding remarks demand the serious consideration of every true Englishman.

PUBLISHED BY THE ADMIRALTY:—	s.	d.
EX-MERIDIAN TABLES. By J. Burdwood, Esq., R.N. Seventh Edition. 1858	1	0
"LEOPARD BANK"—TRUXILLO BAY—A SHOAL BANK CHUSAN ARCHIPELAGO—CHINA—"CAIRNSMORE ROCK."		

CHARTS, &c.

Published by the Hydrographic Office, Admiralty, in September and October 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
Shetland Isles.—Fair Island. Commander G. Thomas, R. N. ..	0	6
West Indies.—Puerto Real entrance. Laguna de Terminos. Lieut. Lawrence, R.N. 1852	1	6
Mediterranean.—Maltese Islands, Comino Channels. Captain Spratt, R.N. C.B. 1857	1	6
N. W. Coast of America.—San Juan de Fuca Straits, Semiahmoo Bay, and Drayton Harbour. Captain Richards, R.N. 1858	1	0
East Indies.—Bombay Harbour. Commander Selby, I.N. Corrected to 1855	3	0
Formoza Island.—Kelung Harbour. Lieut. Preble, U.S N. 1854	3	0
China.—Siam Gulf. Corrected to 1857. J. Richards, Esq., R.N.	2	0
Yellow Sea, China. Peiho River, a Sketch of, 1858	1	0
Australia, S. Coast.—King George's Sound, and Princess Royal Harbour. Corrected by Captain Denham, R.N. 1858 ..	2	6

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

All Communications to be addressed "EDITOR OF THE MERCANTILE MARINE MAGAZINE, 114, *Fenchurch Street, London.*" *N.B.—The real Name and Address of Correspondents must be given—not necessarily for publication, but as a guarantee of good faith.*

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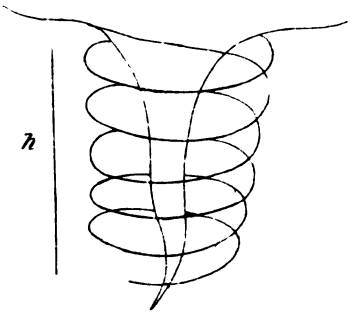
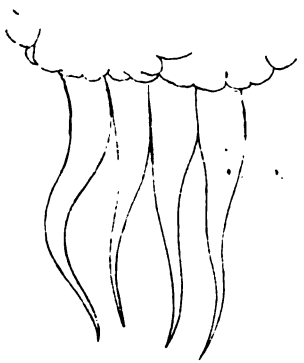


Fig 3.



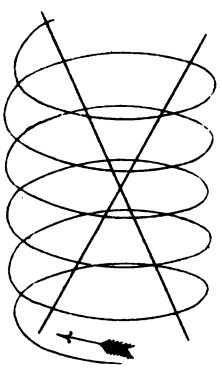


Fig 2.

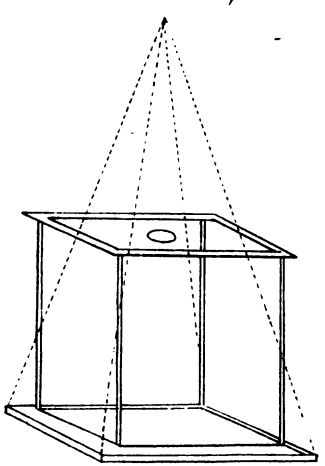


Fig 4

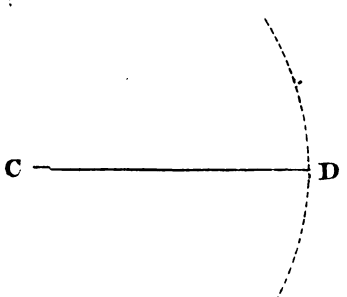


Fig 1

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THE

MERCANTILE MARINE MAGAZINE.

DECEMBER 1858.

LOG OF THE DANISH SHIP "BENJAMIN HOWARD," IN THE CHINA SEAS.

DOUGLASS REEF—TYPHOON AT SWATOW.

By Capt. Lud. Saabye.

Douglass Reef—North Pacific:—As it appears that the Douglass Reef in the North Pacific, which I consider very dangerous, has not been seen since first discovered in 1789, I beg to inform you, that I saw this Reef on my passage from San Francisco to Hong Kong. On the west end of the Reef is a rock about 4 feet above water; I saw it and the breakers pl nly from the deck, distant about 6 miles*. I make it to be in lat. 20° 25′ N., long. 136° 2′ E., which must be pretty exact, as my chronometers proved correct when I passed through the Ladrones; about the latitude there can be no doubt, as I had a very good altitude at noon, 5 hours before I saw the Reef.

The following is an abstract of my Log from thence to Hong Kong:—

Sept. 20.—Increasing breeze, light sails in; Bar. falling;

* We have reason to believe the rocks must be more than 4 feet above water, to be seen at the distance of 6 miles. On the Admiralty Chart of the Pacific Ocean, this Reef is placed in lat. 20° 28′ N., long. 136° 8′ E.

Lieut. Raper, in his Maritime Positions, gives—rocks above water 12 feet, in a lagoon.

Parece Vela, or *Douglass Reef* is thus described in the last edition of the *China Pilot*, published by the Admiralty:—This reef was discovered September 15, 1789, by Capt. Douglass, and is 5 miles in extent, in a W.N.W. and E.S.E. direction. It is in about lat. 20° 37′ N., long. 136° 10′ E., and the rocks comprising it, and those seen by Capt. Bishop, in the *Nautilus*, in 1796, in lat. 20° 15′ N., long. 136° 54′ E. are probably the same as those named Parece Vela, and Vela, by the old Spanish navigators.

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I should'nt wonder if there were a cyclone in advance of us; during the night had very heavy squalls, top-gallant sails in; lightning visible to the north; a large ring round the moon, formed of light clouds; numerous small land birds about the rigging: noon, lat. 21°10′ N., long. 124° 28′ E.; northerly current; wind south throughout; Bar. 4 a.m. 29·68; 9 a.m. 29·70; noon 29·68; 4 p.m. 29·66; 9 p.m. 29 70.

Sept. 21.—The squalls still heavier; one reef in the top-sails; drenching rain; in three days the Bar. has fallen ·3 of an inch, but still never in the rising time; it generally then rose ·02 of an inch, and fell ·05 or ·06 in the falling time; the sky had an ugly appearance, the moon and a few stars seemed buried in mist. At daylight, saw the Bashees; weather moderate and fine, all sail set; passed through the Formoza Channel. Wind throughout south; strong northerly current; Bar. 4 a.m. 29·66; 9 a.m. 29·70; noon 29·69; 4 p.m. 29·65; 9 p.m. 29·70.

Sept. 22.—Increasing breeze; royal and top-gallant sails in; high W.S.W. swell; wind south throughout; noon, lat. 21° 22′ N., long. 119° 20′ E.; Bar. 4 a.m. 29·69; 9 a.m. 29·74; noon 29·72; 4 p.m. 29·69; 9 p.m. 29·74

Sept. 23.—Commenced with heavy thunder and drenching rain, accompanied with heavy gusts of wind; topsail on the cap, courses up; foresail blew away while clewing it up. Midnight set double reefed topsails and courses, and steered our course: Bar. rising; wind first part S.S.E., middle and latter south: noon, lat. 21° 22′ N., long. 117° 16′ E. Bar. 4 a.m. 29 72; 9 a.m. 29·74; noon 29·74; 4 p.m. 29·73; 9 p.m. 29·78.

Sept. 24.—First and middle part heavy thunder squalls and rain; calm between the squalls; latter part calm; noon, sounded in 62 fathoms of water; temperature of the water 3° warmer than usually; lat. 21° 53′ N., long. 116° 0′ E. Wind first and middle part S.W., latter calm; Bar. 4 a.m. 29·78; 9 a.m. 29·80; noon 29·80; 4 p.m. 29.80; 9 p.m. 29·81.

Sep. 25.—First part calm, thunder and lightning; middle, light airs from the north, drenching rain; daylight, Pedro Blanco to N.E.; thick and hazy. 10 a.m. took a pilot; noon, Great Lama to the S.W. by W. about 16 miles. Had calms and baffling winds and did not arrive in Hong Kong before the 27th at 8 p.m. after a passage of 55 days.

Typhoon at Swatow, Sept. 1858:—The following is an abridged extract of the log of the Danish Barque *Triisnelda*, wrecked in the Harbour of Swatow, in a typhoon, on the morning of the 22nd September 1858.

Sept. 21.—Overcast sky, rain and squally; Bar. hanging low. Latter part, wind increasing from N.N.W. and N.

Sept. 22.—1 a.m. wind N.N.E., severe gusts of wind with heavy rain; Bar. 29·20. 2 a.m. wind blowing violently; impossible to stand upright on deck; ship driving to the south with both an-

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chors; struck shortly after and filled with water; Bar. 28·40. At 3 a.m. wind shifted to S.E. blowing as terrific as before; Bar. rising; at 5 a.m. abated. From Amoy only a strong N.E. wind is reported.

I also inclose some further particulars about this Typhoon from the Hong Kong *Daily Press*:—

"On the first and middle part of the 21st Sept. we had light southerly winds, and hot sultry weather—in the afternoon the wind came down from the N.E. and blew fresh for a short time from that quarter. The Schooner *Gazelle* arrived from Amoy. In the evening the weather was squally from the N. and N.N.W. with rain, the glass high and steady—at 10 p. m. it was blowing hard from the N.E. the glass still giving no indication of bad weather—at 11.30 the wind had increased considerably, blowing in gusts. On looking at the barometer I found it had gone down three-tenths, and it continued to fall so rapidly that it could be seen falling until 2 to 2.30 a.m. of the 22nd, when it commenced rising again as rapidly. as it had fallen. During the time the glass was falling, the wind was all the time increasing, until it blew with fearful violence, making frightful noises.

This has been something more than what is usually called a typhoon, and the circle of the cyclone has also been much smaller than usual, which I think will account for the great violence of the wind, as also for the glass not giving timely warning. The height of the storm wave which came in round both sides of Double Island could not have been less than twenty feet, looking to the wrecks of large vessels lying high and dry at high water mark with ordinary tides.

I fear you will scarcely credit the account I am giving you —in fact it requires a person to see the fearful destruction around to do so. At daylight on the morning of the 22nd there was not a vessel out of 21 sail to be seen at her moorings, nor a vestage of a boat of any description;—everything on Double Island is in ruins, not a sound house or godown on the Island. Houses that have stood for years and passed through several typhoons unscathed are now nothing but a heap of ruins.

The schooner *Hazard* was the only vessel out of 21 sail that was not driven on shore. I enclose you a list of all the vessels; —one large iron vessel, the *Hepscott*, was thrown up so high on the rocks, that at high water a boat could be pulled under her keel. It is supposed, that the storm wave stirred up the bottom to a great extent which loosened the hold of the anchors, and at the same time carried the vessels away with it. The *Gazelle* foundered close alongside the *Hongkong*, only the Captain and five hands saved from her, the former being on shore at the time. The *Hongkong* was fortunately driven up high and dry *clear of all rocks*, with the loss of all her masts, and a good deal strained.

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List of Vessels in the River Han, and the state in which they were left, on the morning of the 22nd September 1858, *after the very severe hurricane, on the night of the* 21*st and the morning of the* 22*nd.*

Aganita Adriana, Du. bg.	*Wreck—taken by Chinese*
Louisa Bailie, B. bark	*Stranded*
Moultan, B. bark	*Wreck*
Thusnelda, Da. bark	*Wreck*
Beverly, B. bark	*On shore, not much damaged*
Wm. Frederick B bark	*On shore, much damaged*
Harvest Home, B. bark	*On shore, loss of rudder*
Glendoveer, B. ship	*On shore, bilged, and out of shape*
Dennis Hill, B. ship	*On shore, much damaged*
Alfred the Great, B. ship	*On shore, got off in a sinking state*
Anonyma, B. brig	*Total wreck*
Hong Kong, B. bark	*Stranded*
Laura, Old. brig	*Wreck*
Hepscott, B. ship	*Wreck*
Pantaloon, B. brig	*Wreck—taken by Chinese*
Ohio, Bre. bark	*On shore in the mud—may be got off*
Louisa, B. bark	*Stranded*
Kinaldie, B. ship	*Wreck*
Hazard, B. sch.	*Little or no damage*
Gazelle, B. sch.	*Foundered*
Giovanni, Sard. brig	*On shore, much damaged*

HONG KONG, October 11, 1858.

THE METEOROLOGICAL DEPARTMENT OF THE BOARD OF TRADE AND ITS PUBLICATIONS.

Most of our readers are aware that the "weather" conference at Brussels in 1853 resulted in the establishment of a "Meteorological Department" of that comprehensive branch of the Administration, known as the Board of Trade, and we are bound to confess that a more judicious appointment, as head of that department, than Admiral Fitz Roy could not have been made, for he has long been known as a zealous scientific man and skilful navigator—well able therefore to collate, arrange, and *apply* the *data* which would be brought before him from time to time. It could not be expected that such a Department would do more than "report progress" at first, as the preliminary arrangements of such an office must occupy time and thought, for if the materials were not properly registered and classified, no beneficial digest could be produced. The "Board of Trade Wind-Charts," principally deduced from Maury's Pilot-Charts, in which Maury's *numbers* are converted into *diagrams*, was the first issue of the department Last year the first number of *Meteorological Papers* (in quarto) was brought out; and now the second and third numbers are circulating. Several smaller publications have also been produced, viz.: *Swinging Ship for Deviation; Circular on Deviation; Instructions for Correcting the*

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Deviation of the Compass, edited by Archibald Smith, Esq., M.A., F.R.S., and *Barometer and Weather Guide*, by Admiral Fitz Roy, &c. All these are useful and instructive to the seamen.

The first number of the *Meteorological Papers* is fragmentary, such as selections from logs, indicating the subjects for future discussion, and followed by excellent papers :—1. *On the Meteorology of New Zealand*, by Capt. Byron Drury, R.N. 2 *Results from Meteorological Observations made at the Royal Observatory, Cape of Good Hope, between January* 1842 *and January* 1856, by Mr. Maclear, and 3. *Contributions to the Meteorology and Hydrography of the Indian Ocean* (Part 1.) by Professor C. Meldrum, A.M.

The second number of the *Meteorological Papers* is also fragmentary, but contains a vast amount of very useful practical matter, well arranged, although we must not forget to mention that we think the *Passage Table* rather premature. The chief contents are :—Abstract of General Sailing Directions—Swinging Ship for Deviation—Chronometers—Putting to Sea, or Approaching Land—Tides—Wind and Weather—Weather Glasses—Common Signs of Weather—Squalls and Circling Storms—Aneroid—At Sea—Great Circle Sailing—General Oceanic Directions—Atlantic Ocean—Indian Ocean—Hurricanes and Monsoons—Great Southern Ocean—China Sea, and North Pacific Ocean—Central Pacific Ocean—Torres Strait. These subjects are followed by a Paper from the pen of Lieut. Maury, entitled "Sailing and Steaming in Long Voyages."

The third number of the *Meteorological Papers* is a translation from the German of Professor Dové's work on the "Law of Storms," in which the progress of meteorological science, during the last twenty years, is clearly developed, and the subject altogether admirably treated; at the same time, we must not omit to give due praise to Admiral Fitz Roy for careful and judicious editing.

Looking, then, at the works before us, we believe that the Meteorological Department of the Board of Trade has done good service to science and navigation, by the issue of the publications to which we have merely, at present, called the attention of our readers, and we are glad to find that the Admiral is able to report, that some of the logs brought under his notice "are rendered interesting as well as valuable, independently of statistical details, by remarks which resemble the writings of Dampier, and our earlier, as well as some of the best later navigators."

MANAGEMENT OF BOATS IN A BROKEN SEA.

The following useful remarks on this subject, have been published by the Committee of the Royal National Life-boat Institution. October 1858 :—

Although the proper management of a boat when *running before* a broken sea to the shore is well understood at many parts of our coasts, yet, as mismanagement or carelessness under such circum-

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stances is still the cause of many boats being upset by "broaching to," the Committee of the National Life-boat Institution think it important to call the attention of all their life-boats' crews to the cause of such accidents, and to the proper mode of preventing them, as indisputably proved by experience.

The cause of a boat's "broaching to" is the propelling her rapidly before the sea, whether by sails or oars, instead of checking her speed and allowing each successive sea to pass her on its approach.

There is therefore extreme danger at all times in running a boat *with speed* before a heavy broken sea in shoal water. Excepting where the beach is steep, the safer management of a rowing boat in a really heavy sea, is to back her, stern foremost, to the shore, keeping her bow pointed to the seas and propelling her slightly against each sea until it has passed her or is under her stern.

If a boat be rowed to the shore with her stern to seaward, her oars should then be regularly backed, so as to drop her way on the approach of each wave; and way should not again be given until the wave has passed to the bow, and her position thereby retained on the outer or *safe* side of the wave.

This treatment runs exactly counter to the natural desire to get *quickly* over the apprehended danger; but it is the only safe mode by which a boat can be taken to the shore before a heavy broken surf.

SIGNALS OF DISTRESS,

THEIR IMPROPER USE AT SEA AS PRIVATE SIGNALS.

To the Editor of the Mercantile Marine Magazine.

Sir.—I am directed by the Lords of the Committee of Privy Council for Trade, to transmit to you the enclosed copy of a circular letter which my Lords have felt it their duty to address to Lloyd's, the Shipowners' Societies, and the Local Marine Boards in the United Kingdom, in consequence of a representation which has been made to them, that it is the practice with certain steam-ships, when passing Holyhead, to fire guns, burn blue-lights, and send up rockets, &c., as private signals.

I am, Sir, your obedient servant,

JAMES BOOTH.

Office of Committee of Privy Council for Trade, Marine Department, Whitehall, October 29, 1858.

Office of Committee of Privy Council for Trade, Marine Department, Whitehall, October 29, 1858.

Sir.—Referring to the circular letter from this department, of June 1857*, on the subject of the practice adopted on board some steam-ships, of sending up rockets at night as private signals, I am

* See *Mer. Mar. Mag.* Vol. IV. page 245.

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directed by the Lords of the Committee of Privy Council for Trade, to transmit to you the accompanying copy of a letter* and its enclosure, from the Superintendent of the Chester and Holyhead Railway Company's Steam-packet service, from which it appears, that certain steam-vessels are still in the habit of firing guns, burning blue-lights, and sending up rockets, &c., when passing Holyhead. In laying these papers before the ———, my Lords request that you will call their attention to the steps which have been taken by this Board for providing life-boats, mortar and rocket apparatus, and other means for saving life on the coasts of the United Kingdom, for the purpose of rendering assistance to shipwrecked mariners and to vessels in distress. The efficiency of these means will be greatly impaired, if practices such as those referred to are allowed to prevail, as the indiscriminate use of these signals by vessels, whether in distress or not, can only lead to confusion, and must tend to foster a disregard of the signals by officers and other persons on shore, by making it uncertain whether they be intended for signals of distress or not. My Lords hope, therefore, that the ——— will use their utmost influence with the Owners and Masters of ships for the prevention of so objectionable a practice. I am, Sir, your obedient servant,

JAMES BOOTH.

TREATY WITH JAPAN.

In a remote corner of the world, seldom visited by Europeans, and well nigh forgotten by them, lay the kingdom of Japan. Occasionally wondrous tales reached us of their manners, customs, and extraordinary wealth: but still all was mythical. Since the time of the expulsion of the missionary priests, and the massacre of several thousand Christians, now 200 years ago, they had been left undisturbed, except by the Dutch, who carried on a small trade with the Islanders. Commodore Perry, of the United States' Navy, was, however, enabled a short time since to open up communications with them on behalf of the Americans, and we are happy to say, that the spell has now been broken on our side also, since Lord Elgin, with considerable tact, after having brought to a successful issue the Chinese Treaty, turned towards Japan, and was enabled, with his usual skill, to procure a Treaty with the Tycoon of Japan. The following are the principal *Regulations for British Trade with that country*:—

Regulation 1:—The Captain of a vessel is to exhibit to the Japanese Authorities, within 48 hours of his arrival (Sunday excepted), proof that he has deposited his ship's papers at the British Consulate, and shall then make entry of his ship in writing, and deposit a written manifest of his cargo, stating who are the Consignees, and adding a list of his stores.

Any error may be corrected within 24 hours without fee; after

* See *Mer. Mar. Mag.* of last month, page 327, in a letter from the Commanders of the Mail Packets in which complaint is made of the improper use of the "Signals of Distress" by vessels off Holyhead.

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wards, 15 dollars must be paid. Any goods not entered in the manifest will pay double duty.

Any Captain neglecting to enter his ship within the time prescribed shall pay a penalty of 60 dollars a day.

Regulation 2 :—Japanese Custom-house Officers may be placed on board any ship in port, except ships of war.

No goods to be unladen between sunset and sunrise. Hatches may be secured by the Japanese officers, and any person breaking the fastening shall pay a fine of 60 dollars for each offence.

Any goods discharged from a ship without having been duly entered, shall be liable to confiscation.

Packages with goods of value fraudulently concealed, and not mentioned in the invoice, shall be forfeited.

If any British ship is engaged in smuggling, she shall pay a fine of 1,000 dollars, and the goods shall be forfeited.

Vessels needing repairs may land their cargo without payment of duty, under supervision of the Japanese Authorities. If any part be sold, duty to be paid thereon.

Cargo may be transhipped from one vessel to another, under supervision, and on proof of *bonâ fide* nature of the transaction.

Importation of opium being prohibited, if any British vessel has more than three catties' weight on board the surplus quantity may be seized and destroyed, and any person smuggling opium shall be liable to a fine of fifteen dollars a catty.

Regulation 3 :—*Mode of entering goods by the owner or consignee.* The entry is to state the name of the enterer, and of the ship, the marks, contents, and value of each package.

The original invoices to be presented to the Japanese Custom-house.

The Japanese officers may examine the packages, but without expense or unreasonable delay.

If the importer or owner should find that his goods have been damaged on the voyage, he may apprise the Custom-house, and have the damage appraised, so as to make a deduction from the value in his entry.

All goods intended for export must be entered at the Japanese Custom-house before they are shipped. Any goods shipped without having been so entered, and all packages containing prohibited articles, shall be forfeited.

No entry shall be required for supplies for ships and their passengers and crews, nor for passengers' clothing, &c.

Regulation 4 :—Ships wishing to clear must give 24 hours' notice at the Custom-house. If clearance be refused, the Captain or Consignee and the British Consul must be informed of the reason.

British ships of war shall not be required to enter or clear, nor shall they be visited by the Customs or police.

Mail steamers may enter and clear on the same day, and shall not be required to deliver a manifest, except for passengers and goods to be landed in Japan.

Whale ships touching for supplies, and ships in distress, shall not be required to deliver a manifest, unless they wish to trade.

Regulation 5 :—Any person signing a false declaration or certificate, with intent to defraud the revenue of Japan, shall pay a fine of 125 dollars for each offence.

Regulation 6 :—No tonnage duties shall be levied on British ships in the ports of Japan, but the following fees shall be paid to the Japanese Custom-house Authorities:—

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For the entry of a ship, 15 dollars; for the clearance of a ship, 7 dollars; for each permit, 1½ dollars; for each bill of health, 1¼ dollars; for any other document, 1½ dollars.

Regulation 7:—Duties shall be paid to the Japanese Government on all goods landed in the country, according to the following tariff:—

Class 1. All articles in this class shall be free of duty:—

Gold and silver, coined or uncoined; wearing apparel in actual use; household furniture and printed books, not intended for sale, but the property of persons who come to reside in Japan.

Class 2. A duty of 5 per cent. shall be paid on the following articles:—

All articles used for the purpose of building, rigging, repairing, or fitting out of ships, whaling gear of all kinds, salted provisions of all kinds, bread and bread stuffs, living animals of all kinds, coals, timber for building houses, rice, paddy, steam machinery, zinc, lead, tin, raw silk, cotton and woollen manufactured goods.

Class 3. A duty of 35 per cent. shall be paid on all intoxicating liquors.

Class 4. All goods not included in any of the preceding classes shall pay a duty of 20 per cent.

All articles of Japanese production, which are exported as cargo, shall pay a duty of 5 per cent., with the exception of gold and silver coin, and copper in bars.

Rice and wheat, the produce of Japan, shall not be exported from Japan as cargo; but all British subjects resident in Japan, and British ships for their crews and passengers, shall be furnished with sufficient supplies of the same.

Foreign grain brought into any open port of Japan in a British ship, if no part thereof has been landed, may be re-exported without hindrance.

The Japanese Government will sell from time to time at public auction any surplus quantity of copper that may be produced.

Five years after the opening of Kanagawa, the import and export duties shall be subject to revision, if either the British or Japanese Government desire it.

HOLYHEAD REFUGE HARBOURS.

The following Instructions respecting Holyhead Refuge Harbours, giving a description of the Coast, Sailing Directions for Entering, &c. having recently been issued by the Admiralty; we think they cannot be too widely known, and therefore give them a place in the Magazine.

Bearings Magnetic. Variation 24⅔° *W. in* 1858.

South Stack Light:—The South Stack is a rocky islet lying off the north-west extremity of Holyhead Island, with which it is connected by a chain suspension bridge. The islet is about 240 yards long, 140 yards broad, steeped to on all sides, and elevated 140 feet above high water.*

* See Admiralty Charts; England, West Coast, Sheet 7, Bardsey Island to Point Lynus, with views, No. 1,412; Holyhead Bay, No. 1,473; and New Harbour of Holyhead, No. 2,011.

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Near the west end of the islet stands the Lighthouse, a stone building, 83 feet high, which, together with the attached residences, is painted white. The Lighthouse exhibits, at an elevation of 201 feet above high water, a Bright Revolving Light every *two minutes*, visible in clear weather at 19 miles, the brilliancy being of very short duration.

Near the foot of the western cliff of the Stack, and 30 yards north of the Lighthouse, is a moveable Light-room, for the purpose of showing a Light lower down when the upper Light becomes obscured by fog or haze. This Light, which is 40 feet above high water, is also of the Bright natural colour, and revolves in *one and a half minutes*. A large Bell is sounded during foggy weather.

In Caernarvon Bay, the South Stack Light may be seen over Penrhos Point, until it is intercepted by high land on a N. ½ W. bearing; a vessel having its extreme south ray in sight, will, therefore, be kept three quarters of a mile off Rhoscolyn Beacon in 15 fathoms water, gravel, and shells, and rather more than two miles off Aberffraw Point in 12 or 13 fathoms, or it may be in as little as 8 or 9 fathoms, as there is a small shoal patch at that distance. In Holyhead Bay, the Light is shut in by Holyhead Mountain on a S.W. by W. ½ W. bearing.

As the South Stack Light is an excellent point of departure, the following bearings and distances from it will be useful:—Bardsey Lighthouse, S.W. by S. 33½ miles; Porth Dinlleyn Point, S. by W.¼W. 22 miles; and Skerries Lighthouse, N.E.½E. 7¾ miles.

North Stack Rock:—From the South Stack the coast trends suddenly to the eastward, or about N.E. by E.½E., for 1¼ miles, terminating in a sharp point, steep to, with a large detached rock lying off it, called the North Stack.

Holyhead Mountain:—Between the Stacks the coast forms a bay bounded by the steep cliffs of Holyhead Mountain, or Pen Gybi, which is one of the most remarkable and useful objects on the borders of the Irish Channel, being equally conspicuous from every direction. Its highest point is elevated 709 feet above high water, and on its northern shoulder is the outermost of a series of stations for telegraphing information to Liverpool.

For the greater security of vessels navigating in the vicinity of Holyhead, and of Her Majesty's packets in particular, a signal gun of large size is fired from the above station during foggy weather, once every *half hour*; except from 1 p.m. to 2.30 p.m.,—from 5.30 p.m., until the arrival of the mail packet,—and from 11.30 p.m. until the midnight boat is in,—during which intervals it is fired every quarter hour. Greenwich time being observed.

From the North Stack the coast again bends suddenly to the eastward for about 2 miles to Ynys Wellt and Ynys Gybi Points, between and abreast which is Holyhead Refuge Harbour. From thence to Carmel Head, the north-eastern boundary of Holyhead Bay, the shore is rather low to Church Bay, when the cliffs increase

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in height, and are backed by Pengarn Mountain and the slopes in connexion with it.

Holyhead Refuge Harbour.—This important work, begun in 1848, and still (1858) in progress, is one of great magnitude. It is chiefly formed by an immense pier or breakwater of rubble stone, extending seaward in three principal directions; the heel of the pier rests upon Soldiers Point, the inner part of Ynys Wellt, whence it projects N.E by E. one-sixth of a mile, then E.S.E. rather more than half a mile, and then E.N.E. a third of a mile to its termination, which is N.N.E. one mile from the old Pier Lighthouse, and is marked by a Red Light visible at the distance of five miles; a gong and fog-horn is also sounded in foggy weather. The Pier for the greater portion of its length has been formed in a depth of 7 and 8 fathoms at low water; it affords partial shelter to a roadstead of about 350 acres, and complete protection to a harbour of 260 acres.

The stone used in the construction of the breakwater has been taken from the side of Holyhead Mountain facing the harbour, and the quarry is a conspicuous feature in the land.

Outer Platters:—The approach from the roadstead into the Refuge Harbour is obstructed by some patches of foul ground named the Outer Platters, lying about a third of a mile N. by E. from Ynys Gybi Point, with from 2 to 6 feet water upon them. Their outer boundary is marked by three Black Buoys. An inner patch, named Skinners Rock, having 9 feet over it, is also marked by a Black Buoy.

Carreg Jordan, or Ynys Gybi Reef, with 7 feet upon it at low-water springs, extends N.E. a cable's length from Ynys Gybi Point, and with the Inner Platters, another small patch of rocks just awash at low water, lying on the east side of Ynys Gybi Point, and a short distance outside of the old pier, are both out of the general track of vessels. They will be cleared to the eastward by keeping an old square tower, on the outline, open of the Old Pier Lighthouse S. by W.$\frac{1}{2}$W.

Holyhead Inner Harbour is a narrow inlet, about half-a-mile in length, having a bottom of mud nearly wholly dry at low water, where formerly vessels, seeking refuge, used to lie aground. The old pier projects E.S.E. 400 yards from the south-east point of Ynys Gybi Island, enclosing a space, called the Old Harbour, appropriated to the mail packets, and in which they always lie afloat. The depth in this portion of the harbour gradually increases to 12 and 13 feet abreast the outer end of the pier. Another pier on the opposite side, extending in a N.E. by N. direction, shelters the Old Harbour from the south-east, and forms also one side of a convenient graving dock, which is capable of receiving a frigate. The excellent establishment maintained at Holyhead for the service of postal communication with Ireland, includes everything necessary for keeping the packets in the most efficient state of equipment.

Lights:—A stone tower 37 feet high stands at the head of the Old Pier, and exhibits a Fixed White Light, 44 feet above high water, all night. In the same building there is also a Fixed Red Light,

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which, being visible only between the bearings S.W. and S.S.W., will enable a vessel to avoid the Platters on the east side, and the rocks on the west side of the bay.

A new wooden jetty, to extend 500 feet in an E. by S. direction from the Lighthouse on the Old Pier-head, is now (1858) in course of construction, and the works will be indicated as they advance by two Red Lights, 20 feet apart, and each 5 feet above the level of the jetty.

Several rocks and some foul ground lie in the approach to Holyhead Old Harbour from the eastward, viz. :—

Fenwick or Boliva Rock, with 9 feet upon it, lies N.W.$\frac{3}{4}$N. two thirds of a mile from South Porthwan Point, the south-western boundary of Church Bay. A Black nun-Buoy is moored close to the westward of the rock in 3$\frac{1}{2}$ fathoms water, E.N.E.$\frac{1}{2}$N. 2 miles from the end of the breakwater.

Clipera Rocks, lying 1$\frac{1}{4}$ miles to the south-west of the Fenwick, extend outward abreast Clipera Point for half-a-mile, and are flanked by foul ground on either side. The Black Buoy marking their extremity is moored in 5 fathoms water, with Skinner's monument in line with the Lighthouse on the Old Pier Head S.W. by W.$\frac{1}{4}$W., and the end of the breakwater W.$\frac{1}{2}$N. nearly a mile.

Stag Rock is a small pinnacle, with 14 feet water upon it (it having been lowered 8 feet by diving bell), lying east nearly 3 cables' length from the Old Pier Lighthouse. The marks for it are Pen Towyn Cot in line with the west end of Ynys Pibeo (upon which there is a ruin) S.S.W.$\frac{1}{2}$W.,—and the dockyard flagstaff in line with Evans's flagstaff (the latter stands upon the outline), W. by N.$\frac{3}{4}$N. The least deviation from these lines of bearing will clear the rock.

The ground outside Holyhead Old Harbour along the south-eastern shore is all foul, and the rocks are uncovered at low water to a considerable distance. The same remark applies to all the intermediate coast to Church Bay.

Directions :—Sailing into Holyhead Refuge Harbour is extremely simple, and unattended with any risk. In rounding the breakwater, however, do not stand too close to its extreme end, as a strong tide, setting to the westward for nine hours out of the twelve, strikes hard upon it, and might place the vessel in difficulty in case of a variable wind. Having rounded the breakwater, steer to the W.S.W. between it and the Outer Platters, leaving the Buoys marking the edge of the latter on the port hand, and anchorage may be taken up over any portion of the harbour at a moderate distance from the breakwater, or the bounding shore. The bottom is hard, overlaid by a coating of silt, but as the water is at all times smooth, the holding capabilities are sufficiently good. There are passages between the Platters and Ynys Gybi, but a stranger should not use them.

When closing the harbour at night, round the Red Light at the end of the breakwater at a convenient distance, and having the Red Light on the old pier head bearing S.S.W.$\frac{1}{2}$W., the vessel will be in a fair way for either harbour.

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Vessels entering the Refuge Harbour, should have both anchors in readiness for letting go, with from 30 to 60 fathoms of chain ranged, according to the force of the wind, and should be careful not to take up anchorage in the entrance, or in the fair way of the entrance along the breakwater, in order to avoid the penalty of being obliged to shift berth. Vessels disabled, or without ground tackle, may be laid on a beaching slope at the head of the harbour, which has been prepared for the purpose.

Inner Harbour.—When bound for the Inner Harbour, and having passed the breakwater, be careful to avoid Ynys Gybi Reef and the Inner Platters, by keeping the square tower on the outline, outside of the Lighthouse on the old pier bearing S. by W.$\frac{1}{2}$W. In making towards the Harbour from the east side of the bay, the Buoys already specified will mark the dangers; but should they be out of place, keep George's Windmill open to the westward of the Lighthouse S.W. to clear the Fenwick Rock, and Penrhos Cot open to the westward of Tyn Point S.W. by S. to clear the Clipera Rocks. The following directions, circulated in 1830, by Mr. Evans, the harbourmaster, should then be attended to, though the Inner Harbour will probably seldom be taken for purposes of refuge, now that the New Harbour has been established:—

"Several vessels going into Holyhead Inner Harbour have been lost on the rocks to leeward, in consequence of not having proper sail set, and anchors ready to drop, and from giving the pier head too wide a berth.

"All vessels, therefore, which bear up for the harbour, should be prepared with both their bower anchors ready to let go, and the end of a good warp ready for a boat to take to one of the dolphins moored along the passage for that purpose. The course round the old pier is W.N.W.; therefore, with the wind at north, or to the westward of that point, a press of sail should be carried (particularly aftersail). Keep the pier-head and jetty close aboard, and do not start tack or sheet until the vessel is well within the Lighthouse and the packets' moorings: then act as circumstances may require.

"The depth of water at the entrance of the Inner Harbour at low water springs is about 11 feet. It being a tidal harbour, and frequently with many anchors down in the way, vessels drawing 12 feet should not run in until about 2 hours flood; and those of a heavier draught should, if possible, keep off until about 4 hours flood.

"In tempestuous weather, no vessels should run in for the Inner Harbour at night. Vessels that anchor outside are obliged to keep a light up during the night."

Several anchorages in Holyhead Bay, such as Church Bay upon the eastern side, and Holyhead Road a quarter of a mile off the old pier lighthouse, were formerly much frequented with certain winds, but the establishment of the Refuge Harbour renders this risk unnecessary.

Tides.—It is high water, full and change, at Holyhead Old

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Pier at 10h. 11m.; springs rise 16 feet,—neaps rise 12½ feet,—and neaps range 8¾ feet.

Holyhead Race.—At a mile to the westward of the South Stack the flood stream, making rather before low water at Holyhead Old Pier, sets E. by N., and then more easterly into the Bay. At the above distance, the influence of the *race* is felt; the stream runs 5 knots at springs, and 3 knots at neaps, causing a heavy sea when the wind is from the northward. The ebb of the same strength sets in a nearly opposite direction.

The ebb, or westerly-going stream, runs 9 hours out of 12 past the Refuge Harbour, and on the south-west side of Holyhead Bay, a fact which must be borne in mind when working into or out of the Bay.

The *race* extends 1½ miles off shore, the most turbulent portion of it being between the North and South Stacks. Winds from North to N.W. cause the worst sea,—and even in those from S. to S.W., concurrently with the height of the springs, it is dangerous to small vessels; with easterly winds, however, there is generally smooth water. The position of the highest sea in the *race* being N. by W. half a mile from the Stack Lighthouse, it will be avoided by keeping the Skerries Lighthouse to the eastward of N.E. by E. ½E.; but a prudent seaman will always keep well outside it in bad weather.

PEACOCK AND BUCHAN'S COMPOSITIONS FOR SHIPS' BOTTOMS.

It has been a subject of remark by all who are in the habit of visiting Docks where *iron ships* are loading or unloading, that the smooth and clean appearance of the bottoms of some of these vessels strongly contrasts with that of others built of the same material. It will generally be found, that those painted with Messrs. Peacock & Buchan's *Improved Composition for Iron Ships* appear to much greater advantage than such as are coated with red lead, or any other paint sold as a preventative against a foul bottom.

We are unable to say of what chemical agents or substances Messrs. Peacock & Buchan's *Composition* consists,—but not only from what we have seen, but also from general report, we are led to believe that nothing has yet been used that is equally efficient in protecting iron ships' bottoms.

It is well known to those who have sailed in iron ships, that one of the greatest annoyances with which they have hitherto had to contend, has been the fouling of the bottom by the adhesion of weeds, but more particularly of barnacles, sometimes to the depth of several inches. In one particular case this agglomerated mass, when removed, was found to weigh no less than six tons. By these impediments the speed of a vessel is materially diminished. The *Pekin* for instance, which was a fast sailing ship, was reduced to a speed of 6½ knots per hour. Besides, the mass of decomposing matter, when being removed in the dock, evolved such quantities of sulphuretted hydrogen, that the paint of the vessel's hull was quite tarnished, whilst the smell was exceedingly offensive, and injurious to the health of the crew, &c.

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To remedy these disadvantages, several persons have invented a kind of paint to prevent the adhesion of the marine shell-fish and sea-weed, but all have more or less failed, with the exception of Messrs. Peacock & Buchan, who have succeeded in finding out a chemical compound entirely free from copper, which not only prevents animal and vegetable matter from adhering to it, but also preserves the iron from oxydization. As soon as the vessel gets into the water, the composition is acted upon by the hydrochloric acid in the salt water, and a poisonous quality, destructive to both animal and vegetable life, is evolved, forming an unctuous pellicle, somewhat analogous to the slime found on the body of fishes, which not only prevents corrosion, but from its slippery nature, is said even to increase the speed of the vessel. The compositions formerly used contained a great quantity of copper, which instead of protecting, destroyed the iron, the galvanic action hourly combing the plates.

Messrs. Peacock and Buchan have invented similar compositions for protecting wood from the attacks of the *Teredo navalis*, and zinc and copper sheathing from corrosion.

REWARDS AND TESTIMONIALS.

Her Majesty's Government have awarded **Captain Renaud**, of the French Barque *Maurice*, a Gold Medal, in acknowledgment of the services rendered by him to the Hamburg Steamer *Austria*, destroyed by fire at sea on the 13th ult., one of the persons whom he rescued being a British subject.

His Imperial Majesty the Emperor of the French has awarded a Silver Medal of the first class to **John Waterson, Thomas Harrison, Joseph Harrison, Daniel Lace**, and **John Kenan**, five fishermen belonging to the Isle of Man, for having rescued the master and three men of the French ship *Jeune St. Charles*, which vessel was wrecked on the Isle of Man on the 8th April last.

His Imperial Majesty the Emperor of the French, has awarded a first class Silver Medal to the following persons:—**James Callopy** and **Daniel Shea**, coastguardmen of Her Britannic Majesty's Ship *Eagle*; **John Staples**, mate of the Barque *Prudence* of Bridgewater; **Henry Score**, Mate of the Barque *Lively*, of Bridgewater; and **Inigo Jones**, fisherman at Porthcawl; for having saved the crew of the ship *Medicis*, wrecked upon the Scarweather bank, Porthcawl.

Rewards for saving life at sea, have recently been awarded by the Board of Trade to the undermentioned, viz.—

To **William Harrison**, fisherman and pilot; **Thomas Cuthbert**, joiner; **Thomas Knaggs**, joiner; and **William Sace**, miner; the sum of 10s each, in consideration of their meritorious conduct in putting off in a coble and saving two men from the *William Clowes*, sloop, wrecked off Port Mulgrave on the 6th inst.

To **William Horland**, a Silver Medal, for his gallantry in

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saving life while serving on board the *Glencoe*, of Whitby, on the occasion of the wreck of said vessel, near Mullion cove, on the 18th ultimo.

To **S. B. Gorn**, chief boatman, coastguard station, Fraserburgh; **Malcolm Fletcher**, **John Goodridge**, and **John Cormack**, boatmen, £1 each; **William Stephen**, **William Noble**, **Andrew Noble**, pilots, and **John Strachen**, ship carpenter, 10s each; in consideration of their services in saving the crew of the schooner *Fortuna*, of Griefswald, which vessel was driven on shore, during a hurricane, on the beach between Fraserburgh and Cairnbulg head, on the 8th ultimo.

To **Richard Corcoran**, **Bartholomew Mahony**, and **James Penman**, commissioned boatmen, and **Bartholomew Leyden**, boatman, coastguard station, Wexford, 10s each; and to **Thomas White**, **John Furlong**, **John Howlin**, **Thomas Delany**, **Patrick Kelly**, countrymen and fishermen, £1 : 5s each: for saving the crews of the schooner *Sisters*, of Milford, and brigantine *Sir Donald Campbell*, of Newry, wrecked on the coast of Wexford, on the 19th ultimo.

To **William Johnson**, beachman, North Yarmouth, £1; to **James Saunders**, **Benjamin Bernard**, and **George Rumbold**, beachmen, North Yarmouth, 12s each; and to **James Baker**, coastguardman, 10s: for services rendered, in saving four of the crew of the schooner *Queen*, of Grimsby, wrecked off Yarmouth, on the 18th ultimo.

CERTIFICATE SUSPENDED.

At a Naval Court, held at the British Consulate, Riga, on the 1st of Nov. Charles Faulding, Master of the Schooner *Allegro*, of Goole, was tried upon charges of drunkenness, misconduct, and drunkenness and neglect of proper precaution on the occasion of the said Schooner getting on shore at Domesness on the 20th Oct. preferred against him by the Mate of the said vessel. The Court being of opinion that the charges were proved, and that the Master ought not to be intrusted with the command of the vessel back to England, recommend that he should be superseded in the command. The above having been reported to the Board of Trade, their Lordships have directed that the Certificate of Service, No. 73,420, of Charles Faulding, shall be Suspended for twelve months.

ROCKS AND SHOALS.

Australia — Torres Strait — Tynemouth Bank: — The steam ship *Tynemouth*, belonging to Messrs. W. S. Lindsay & Co., of London, whilst proceeding through the North channel in the South-eastern approach to Torres Strait, at nearly low water on the 7th of

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August 1858, passed over the north end of a dangerous coral patch, apparently about 100 yards in extent, not hitherto laid down in the charts.

The centre of the patch appeared nearly awash, and the coral was distinctly seen under the ship's bottom, the depth being four fathoms on the port side and eight fathoms on the starboard.

The shoal lies in about lat. 11° 47′ S., long. 145° 33′ E., with the sand of the Middle banks bearing E. ½ N.; east end of Cockburn spit S.W. by W.; Cockburn isles W.S.W.; and Sir Charles Hardy north island S.S.W. ½ W.

Caution. As this danger lies near the fairway track inserted in the Admiralty charts, and there is reason, from the nature of this coral sea, to suppose other dangers, which have escaped detection, may exist on either side,—vessels in pursuing this course are cautioned to keep a good look out, and endeavour, as much as possible, to preserve the track recommended.

Bearings Magnetic. Variation 5° East in 1858.

CONDENSED LIST OF

CHANGES IN LIGHTS, BUOYS, &c.

ISSUED BY THE ADMIRALTY, TRINITY HOUSE, AND FOREIGN GOVERNMENTS.

Notice to Mariners, from October 25th to November 25th, 1858.

The Sound—Coast of Denmark—Alteration of Copenhagen Light:—On the 15th of December 1858, the present Fixed Light on the Tre Kroner Battery in Copenhagen Road will be removed, and a Light of the following description exhibited instead:—

The new Light will be a Fixed White Light, varied every 3 minutes by a flash of 8 seconds duration, preceded and followed by an eclipse lasting 26 seconds. It will be placed at an elevation of 41 English feet above the sea, and should be visible in clear weather from a distance of 8 miles, the flash from 11 miles, all round the horizon, except to the south-west and westward, where it will be hidden by some of the battery buildings. Within a distance of 6 miles the eclipses will be almost imperceptible.

The Lighthouse is of iron 29 English feet high, and painted white, with a red top. It is erected within the parapet of the battery, and stands S.W.½-S. 21 yards from the old light.

Bearings Magnetic. Variation 15½° W. in 1858.

Atlantic—United States—Alteration of Barnegat Light:—The new Light-tower on the south side of the entrance of Barnegat Inlet, New Jersey, is nearly completed, and on and after the 1st of January 1859, a Light will be exhibited therefrom, when the Fixed Light at present shown will be *discontinued.*

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The new Light will be *Revolving*, showing a Bright *Flash* of the natural colour every 10 seconds, placed at an elevation of 165 feet above the sea, and visible in ordinary weather from a distance of 22 miles.

The Light-tower is of brick; the upper half is of the natural colour of the brick; the lower half is White, and the lantern is painted Black. The whole is 163 feet in height, and its approximate position is in lat. 39° 45′ 49″ N.; long. 74° 6′ 5″ W. of Greenwich, according to the U. S. Coast Survey.

Atlantic—United States—Beacon Lights at Amelia Island, Florida:—On and after the 1st of November 1858, two Lights will be exhibited from Beacons erected on the north front of Amelia Island, on the east coast of Florida, to guide vessels into the entrance of Fernandina Harbour.

The *seaward* Light will be a Fixed White Light, placed at an elevation of 60 feet above the sea. The Beacon is a wooden frame-work structure, painted Red.

The *inner* Light will be also Fixed and White, but elevated 35 feet above the level of the sea. The Beacon is on a dwelling-house painted White, with a Red roof.

The Beacons should be visible in ordinary weather from a distance of 6 miles.

Directions.—To enter Fernandina Harbour, bring Amelia Island main Light to bear S.W. or W.S.W. in 7 fathoms water, and steer for it until the Beacons are in range or line W.$\frac{3}{4}$N.; then proceed in with them so, until up with the inner Buoy.

Bearings Magnetic:—*Variation* 4° *E. in* 1858.

Gulf of Mexico—United States—Alteration of Pass à L'Outre Light, Mississippi:—On the 1st of January 1859, the present Fixed Light varied by Flashes, on Middle Ground Island, on the north side of the entrance to the Pass à l'Outre into the Mississippi River, will be changed to a Fixed White Light.

Norway—West Coast—Light on Rondoe:—On and after the 18th of October 1858, a Light would be exhibited from the new Light-tower on Rondö, at the entrance of Bred Sound, on the west coast of Norway, when the Light shown from the old Lighthouse would be *discontinued*.

The new Light is a Fixed White Light, placed at an elevation of 161 English feet above the sea, and should be visible in clear weather in every direction seaward, at a distance of about 22 miles. It will be exhibited from the 1st of August through the winter, until the 16th of May.

The new Lighthouse is a circular tower of iron, painted Red. It stands North 226 yards from the old Lighthouse, in lat. 62° 25′ N., long. 5° 35′ 10″ E. of Greenwich.

Bearings Magnetic.—*Variation* 21$\frac{1}{2}$° *W. in* 1858.

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Gulf of Mexico—United States—Light in Matagorda Bay :—On and after the 15th of August 1858, a Light would be exhibited from a Lighthouse recently erected at the Swash, off Alligator Head, in Matagorda Bay, Texas, to mark the upper entrance of the Swash Channel.

It is a Fixed Light, placed at an elevation of 38 feet above the mean level of the bay.

The Lighthouse is an hexagonal structure, erected upon iron piles, and painted White; the iron-work is painted Black. It stands in range or line with the Buoy in the centre of the Channel, and the small Beacon-Light at Saluria,—and from it the Buoy bears N.N.E.; Saluria Light S.S.W.; Decrow Point S.S.E.; Matagorda Lighthouse South; Alligator Head W.N.W.; and Half-moon Reef Lighthouse N.E. by N.

Bearings Magnetic. Var. 9° East in 1858.

Atlantic—United States—Light Vessel off Handkerchief Shoal—Vineyard Sound :—On and after the 15th October 1858, a Light-vessel would be stationed off the Handkerchief Shoal, which lies off Monomoy Point, Massachusetts.

The Light is a Fixed White Light, shown all night.

The Light-vessel is schooner rigged, and carries a Black oval *day-mark* at each masthead. Her hull is painted straw colour, with the word "Handkerchief" in large black letters on each side. She is moored in $5\frac{1}{4}$ fathoms water S. by E. $\frac{1}{4}$ E. $1\frac{1}{2}$ miles from the south part of the shoal, with Monomoy Point Lighthouse N.E. $\frac{1}{4}$ N.; Shovelfull Shoals Light-vessel N.E. $\frac{3}{4}$ N.; Great Point Lighthouse S.$\frac{1}{2}$W.; Handkerchief South Buoy N. by W. $\frac{1}{4}$ W.

Bearings Magnetic. Variation $10\frac{1}{4}°$ *W. in* 1858.

Fog Signals from United States Light Vessels :—On and after the 1st of January 1859, in thick or foggy weather, a Bell will be rung, and a Fog-horn sounded alternately, at intervals not exceeding five minutes, on board Light-ships of the United States, to warn vessels of their proximity.

Norway—N.W. Coast—Light at Stam-Sound :— On the 1st of January 1859, a Harbour-Light will be established on the south point of Törnholm, at the southern entrance into Stam-Sound, south side of West Vaargö, one of the Lofoten islands.

The Light will be placed at an elevation of 58 English feet above the sea, and should be visible in clear weather from a distance of about 7 miles from S.W. round southerly to E. by S.

It will be exhibited from the 1st of January to the 14th of April.

Its position is in lat. 68° 7′ 15″ N., long. 13° 53′ E. of Greenwich.

The Light kept in sight clears a small Reef called Stabben, which lies to the S.W. of it:—S.S.W.$\frac{1}{2}$W. of the Light is the Brusen

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sunken Rock: and S.S.W. about 3½ cables' lengths from the Light is the Skarvstene Reef.

Directions. The usual entrance into Stam-Sound is to the westward of the Skarvstene, and between Törnholm and Iöven, or Io Island; or the passage between Törnholm and Skarvstene may be taken. In either case the Light must be left 2 or 3 cables' lengths to starboard, when the course will be north-easterly to the anchorage, which is in 14 or 15 fathoms water.

Bearings Magnetic.—Variation 16° *W. in* 1858.

Norway — S. Coast — Alteration of Frederiksværn Light:—On the 1st of December 1858, the Light on the south point of Stavœrnsö, off Frederiksværn, south coast of Norway, will be coloured Green.

China — Woosung River, Shanghae:—In place of the Buoys laid down to mark the channel in crossing the bar at Woosung, two Boats have been moored in the following positions:—

The Boat painted White and flying a White Flag, lies in 14 feet at low water, spring tides, on the western extremity of a shoal spit which makes off from the eastern shore. It is 1⅓ cable's length from the shore. The White House in Mr. Henderson's garden, bears from it S. 20° E.; Messrs. Jardine, Matheson and Co.'s Coal Godowns S. 21° W.; and the Woosung Joss Poles N. 25° W.

The Boat painted Red and flying a Red Flag, lies in 12 feet at low water, spring tides, on the northern extremity of the Lower Middle Ground. The White House in Mr. Henderson's garden bears from it S. 18° 30′ W.; Messrs. Jardine, Matheson and Co.'s Coal Godowns S. 77° W.; and the Upper Bar Creek open N. 88° E., distant 5⅓ cables. It is 2⅔ cables from the nearest part of the eastern shore, and between it and the receiving ships, which lie on the western side, the ground is very uneven, and in several places very shoal,—many spots having as little as 9 feet at low water.

It is recommended, that vessels proceeding up the river should pass close to the White Boat, leaving it on the *port* hand, and after passing it steer for the Red Boat, leaving it well on the *starboard* hand, and gradually approach the eastern shore to a ship's length off the Upper Bar Creek.

The Red Boat should not be brought to the eastward of S. 60° E. The Boats bear from each other S. 52° E. and N. 52° W., distance 4½ cables; least depth of water between them, 13 feet at low water, spring tides.

England — Entrance to the Thames — Alteration of Buoys in the Horse Channel: — The following alterations and additions to the Buoys in the Horse Channel have recently been made, viz.:—

The *Gore Patch Buoy* has been taken away.

The *Middle Last Buoy* has been moved into 10 feet at low water

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spring tides, and now lies with the following marks and compass bearings, viz. :—

Chislet Mill, open West of George's Farm	S.S.W. $\frac{1}{4}$W.
Margate Hook Beacon, in line with Margate North Mill	S.E. by E. $\frac{1}{4}$ E.
Horse Buoy	W. by S.
West Last Buoy	N.W. by W. $\frac{3}{4}$W.
East Last Buoy	S.E. by E. $\frac{1}{4}$ E.

The *East Last Buoy* has been moved into 10 feet water, and now lies with—

Minster West Mill, touching the east end of St. Nicholas Eastern Coast Guard Station House	S.S.E. $\frac{1}{2}$ E.
Chislet Mill, on a small House to the eastward of Reculvers Coast Guard Station	S.W.
Hook Beacon	S.E. by E. $\frac{1}{4}$ E.
Middle Last Buoy	N.W. by W. $\frac{1}{4}$W.
Reculver Buoy	South

Reculver Buoy :—A Red Buoy, marked "Reculver," has been placed on the Reculver Sand in 12 feet at low water spring tides, with the following marks and compass bearings, viz. :—

Minster East Mill, and St. Nicholas western Coast Guard Station, in line	S.S.E. $\frac{3}{4}$E.
The east end of the Miller's House at Chislet, on the Centre of Vantipier's Barn	S.W. $\frac{1}{2}$W.
Margate Hook Beacon	East
Horse Buoy	N.W. by W.
East Last Buoy	North

The *South Spit of Margate Sand*, having extended itself to the Southward, an additional Black Buoy, marked "Margate South Spit," has been placed in 5 fathoms water to guard it, and lies with the following marks and compass bearings, viz. :—

Monkton Beacon, on the centre of St. Nicholas eastern Coast Guard Station	S. $\frac{1}{2}$ W.
Herne High Mill, on with the south part of the Reculvers Coast Guard Station	W. $\frac{3}{4}$S.
Margate Hook Beacon	N.W. by W.
South Margate Buoy	E. by S. $\frac{3}{4}$S.

England—Entrance to the Thames—Gunfleet Sand Buoys :—An additional Buoy, coloured Red and White in Chequers, has been placed near the Gunfleet Sand, and now lies with the following marks and compass bearings, viz. :—

Great Holland Church, in line with the southernmost of Two Wrecks on the Gunfleet Sand	N. $\frac{1}{2}$W.
Gunfleet Lighthouse	E. by N.
West Gunfleet Buoy	W. $\frac{1}{4}$S.
Heaps Buoy	S.W. $\frac{1}{2}$S.

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Australia—S. Coast — Light on Cape Borda: — The Light on Cape Borda, the north-west point of Kangaroo Island, off St. Vincent Gulf, South Australia, has been exhibited since the 13th of July 1858, and is designated the "Flinders Light."

The Light, which Revolves, showing alternately Red and White *every half minute*, is visible between N.E. by E.$\frac{1}{2}$E. *round by the north and west* to S.W. by S. The White Light may be seen in clear weather from a distance of 30 miles, but the Red Light not more than about half that distance, and when the Red Light is not distinguishable the White Light will appear at *intervals of one minute.*

The Lighthouse is a square tower of stone, and stands about 500 yards from the edge of the cliff in lat. 35° 45$\frac{1}{2}$′ S., long. 136° 34$\frac{1}{2}$′ E. of Greenwich.

Directions.—Vessels approaching Cape Borda from the south-west should keep the Light well open of the high land to the southward of the Cape, to avoid the Reef off Cape Bedout, the western extremity of the island, and if bound up Investigator Strait, after having rounded Cape Borda, they should keep the Light quite clear of the high land to the eastward of it on a S.W. by W. bearing until Cape Forbin is passed, when it may be shut in.

In proceeding down Investigator Strait, the Light should not be brought to bear to the westward of S.W. by W.

Bearings Magnetic. Variation 4$\frac{1}{2}$° *East in* 1858.

Mediterranean — Sicily — Alteration of Light at Augusta:—On and after the 1st of November 1858, the Fixed Light at present shewn from Fort Avola, in the Harbour of Augusta, on the East Coast of Sicily, will be replaced by a Light Revolving *once in three minutes*, at an elevation of 90 English feet above the sea, and visible in clear weather from a distance of 14 miles.

Mediterranean—Coast of Illyria—Light at Trieste:—On and after the 4th of October 1858, a new Light would be exhibited from the Lighthouse on Santa Teresa Mole, Trieste, when the Fixed Light shown during the alteration of the illuminating apparatus would be *discontinued.*

The new Light is *intermittent every half minute*, the period of brightness lasting 8 seconds, and it may be seen in clear weather from the distance of 13 miles.

England—E. Coast—Yarmouth Roads—Alteration of Buoys in Stanford Channel:—

The *South Holm Buoy* has been moved one and a half cables' length to the S.W., and now lies in five fathoms at low water spring tides, with the following marks and compass bearings, viz.:—

Lowestoft High Mill, in line with the North Pier Head Light	N.$\frac{1}{4}$W.
Stanford Light-vessel	N.E. by N.
East Newcome Buoy	N.W.$\frac{1}{4}$W.

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The *East Newcome Buoy* has been moved three cables' lengths to the S.W., and now lies in four fathoms at low water spring tides, with the following marks and compass bearings, viz. :—

Lowestoft High Mill, its width open west of the South Pier Head Light	N.
Stanford Light-vessel	N.E.$\frac{1}{2}$N.
South Holm Buoy	S.E.$\frac{1}{4}$E.

England—E. Coast—Fixed Lights at Whitby :—The Two Light-towers on High Whitby being completed, Bright Fixed Lights are now exhibited therefrom. Position :—Lat. 54° 28′ 40″ N., long. 0° 34′ 10″ W. of Greenwich.

The Lights are 775 feet apart, in a N. 19° W., and S. 19° E. direction, and when *in line* lead on Whitby Scar Rock, distant about 2 miles from the Northern Tower.

The Lights burn at an elevation of 247 feet above the mean sea level, and range from N. 28° W. round seaward to S. 17° E. They are visible at a distance of about 23 miles, and shew over the North Cheek of Robin Hood's Bay.

Mariners are to observe that the Light from the Northern Tower is coloured Red from the line of bearing of the Whitby Scar Rock, to the inshore bearing of N. 28° W.

Bearings Magnetic.— Variation 23° *W. in* 1858.

NEW BOOKS.

Books Published by the Admiralty :—	s.	d.
Tide Tables for 1859. Computed by John Burdwood, Esq., R.N.	1	6
Hydrographic Notice, No. 3, Australia—Torres Strait—Tynemouth Coral Bank.		
Books Published by the Board of Trade :—		
First Number of Meteorological Papers	5	0
Second Number do. do.	1	6
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CHARTS, &c.

A Chart of the North Atlantic Ocean, with the Winds, Currents, and other Phenomena. By A. G. Findlay, F.R.G.S. On Four Sheets, with Explanatory Notes, Price 16s; or each Sheet separately 4s. London: R. H. Laurie, 53, Fleet Street.

It is some time since we heard that a Chart of the North Atlantic, delineating at a glance the Physical Geography of that part of the ocean,

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was in preparation by Mr. A. G. Findlay. From that gentleman's standing as a Geographer, we expected a superior production, and are glad to be enabled to inform our readers, that it fully realizes our expectations. The following is a general summary of the information collected together on this Chart :—

The geographical features of the N. Atlantic Ocean are given from the latest Government surveys; the rocks, shoals, and other physical features from all reliable authorities.

To become acquainted with all that is now known of the influences which affect a ship's course in the North Atlantic, the following most elaborate Charts must be *critically* examined :—Major Rennell's Current Chart, 4 sheets; Maury's Track and Current Chart, 8 sheets; Ditto Thermal Chart, 8 sheets; Ditto Pilot or Wind Chart, 2 sheets; Ditto Trade Wind Chart, 1 sheet; Rain, &c., Chart, 1 sheet; the Magnetic Chart, 2 sheets,—or in all, 26 large sheets, besides a great amount of information distributed through many other works. All these authorities have been laboriously studied and arranged in this Chart, and their teaching rendered intelligible at one view.

The *Wind* and its prevailing direction are given over the surface of the Chart in a series of simple diagrams, instead of the complicated calculations necessary to reduce the 220,000 observations arranged in Maury's Pilot Charts. The amount of calm and consequent light airs and baffling winds, are carefully indicated, so that the sailing-master may, by their means, be able to avoid some regions in certain seasons, and pass through them readily at others. The *Currents*, the next most important element in navigation, have been all calculated for one mean result in each month, involving and saving a great amount of labour. The *Temperature* of the sea, has been derived chiefly from the Thermal Charts of Lieutenant Maury, a dense mass of apparently confused figures, here analyzed and simplified to produce a mean result for each calendar season. The *Magnetic Variation* has been corrected for the secular change, and is shown as it is in 1858.

The Chart has been constructed to supply a want which is indicated by the great attention paid of late years to Marine Meteorology,—the accumulated results of which have not as yet been given to the mariner in an entire and practical form for his daily use, and as such we strongly recommend it.

Charts Published and corrected by the Hydrographic Office, Admiralty, in November 1858. *Sold by the principal Chartsellers in the Kingdom.*

	s.	d.
England.—Lundy Island. Corrected by Commander Alldridge, R.N. 1858	1	0
Texas, United States. Corrected by United States Survey to 1858 ..	3	0

It is particularly requested that all Communications be sent to the Editor as early in the month as possible.

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The Committee of this Institution would call attention to the fact, that 398 Persons were saved from wrecks during the past year by the Society's Life-boats, and those of other bodies; that it has now Seventy-three Life-boats under its management: that it has Twelve more Boats nearly ready to be sent to their Stations; and that a large number of additional Life-boats are wanted on the Coasts. The constant demands on the limited Funds of the Institution are therefore necessarily very heavy, and the Committee earnestly appeal to the Public at large for assistance.

THOMAS BARING, Chairman.
THOMAS CHAPMAN, Deputy Chairman.

October 1858.

Contributions are received by all the Metropolitan and Country Bankers, and by the Secretary, at the Institution, 14, John Street, Adelphi.

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